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Postgraduate Education in Higher Education

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It is a generational work designed to take a comprehensive and utilitarian look at higher education in the first decade of the twenty-first century and to provide a glimpse of potential developments as the century progresses. In this regard, it combines many of the intentions found in the three antecedent works previously described. This series provides basic and (per force) historical perspectives on topics covered that touch upon the impact and approach within universities regarding issues of social justice; designing and fostering a climate and structure that promotes the provision of high skills and new knowledge (transmitted and created); creating schema that ensure the quality and integrity of all programs across the campus; issues and approaches toward establishing and maintaining good external and internal governance; the effective management of financial and human resources; the importance of purpose in generating a viable university structure; the impact of changing paradigms in learning, teaching, and student engagement (the changing toward a learner-centered environment); capacities in relation to human and financial resources available to higher education; and the expectations from and performance of higher education institutions.

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With 41 Figures and 22 Tables

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Memoriam

As the volume progressed to its halfway point, Professor Ronel Erwee unexpectedly passed away in March 2017 after a short illness. Her warmth and caring to colleagues and friends is sorely missed; however, her sense of detail and preparation are noted throughout this volume because of her diligent work in reviewing a number of the chapters and her guidance in shaping the approach and content that are found within these pages. This volume is dedicated to her memory.

Ronel was a Professor in the Faculty of Business, Education, Law and Arts, University of Southern Queensland (USQ), Australia. Moving from South Africa, she arrived at USQ in 1998, teaching in the areas of International Management, People Development and Team Leadership, and in the DBA program as well as supervising Ph.D. and DBA candidates. Her areas of research include Strategic Thinking, International Human Resource Management, Knowledge Management, Managing Diversity, Leadership, and Organizational Change. Above all else, she was noted for her dedication and care on the topics of postgraduate education and research supervision. Her colleagues' esteem for her devotion inspired the creation of the Ronel Erwee Memorial Award for Excellence in Postgraduate Research Supervision given to groups or individuals demonstrating specific contributions to the advancement of HDR student research culture and/or HDR student supervision practices at USQ.

I also need to take this opportunity to thank Drs. Marcus and Meredith Harmes for the willingness to enter into this project *media in res* and help complete the request, review, and other administrative processes that are part of creating a volume such as this one. Their contributions have been significant, building on and completing the work that was either incomplete or still undone.

University Development and
Administration Handbook Series

Fernando F. Padró
Editor-in-Chief

Preface

What is the purpose of postgraduate higher education in today's world? Massification has made these degrees more available in industrialized countries as part of a paradigm shift within the knowledge society; however,

> Planning postgraduate education and research provision in middle- and low-incomes countries are very complex processes. . . This situation obliges governments and higher education institutions to strategically choose programmes and delivery likely to: (i) sustain national development priorities; (ii) invest available resources prudently; (iii) provide quality assurance measures, and (iv) foresee career opportunities for postgraduate students (UNESCO 2008, p. 8).

Masters and doctoral degrees have traditionally been part of what Maturana and Valera (1980) and later Luhmann (1995) indicated as part of organizational reproduction (*autopoiesis*). In an era of reduced government funding and rising operational costs, fewer academic positions – especially full-time academic positions – are available as academic retire. On the other hand, the socioeconomic need to increase national and personal intellectual capital in a knowledge-driven world does provide impetus for these higher degrees to meet job flow ("the gross creation and destruction of jobs, reflecting the expansion and contraction of establishments" – Burgess et al. 2000, p. 474) demands in the economy.

Postgraduate education includes those degree programs classified by the OECD (2015) as master's degree or equivalent (ISCED 2011 Level 7) or doctoral degrees (ISCED 2011 Level 8). There are two prevalent models regarding the linkage between first cycle, second (intermediary) cycle, and third (usually, terminal) cycle degrees. The European model "link between bachelor and master programmes while organizing doctoral training separately" while the model used in the USA closely links master's and doctoral level programs (Teichler 2008, p. 25).

While much has been written about doctoral degrees – good and bad – little seems to be the case regarding the master's degree. Much of the reason may be that the perspective surrounding master's degrees still seems to echo Philip Harriman's observation back in 1938 about the "confusion as to the significance of the degree" (p. 25). In a number of disciplines in the USA, the master's has had the reputation as a consolation prize for students not seen capable of completing a doctorate degree (Glazer-Raymo 2005). This perception has been countered by the rise of

professional programs in universities, a credentialing scheme in which a master's represents increased specialization combined with a reduction in the value of a bachelor degree. As Glazer-Raymo (2005) noted, "[the] master's degree is evolving as an entrepreneurial credential with the potential to alter the direction of graduate education in the liberal arts as well as in the professions" (p. 5). The increasing amount of online master's programs and new delivery modes such as "executive MBAs" attest to the entrepreneurial nature of the degree. Yet, the ambivalence toward these second, intermediary degrees reflects the reality that they are often relegated to second-class status in preference to doctoral degrees (Giordano 2000), with the exception of the professional degrees such as those in law and medicine. Few academics want to talk about it (Cassuto 2015). While this volume provides a broader perspective on non-doctoral degrees, the overall tenor exemplifies the greater concerns and interest in the professional pinnacle credentials over the intermediary degree. Reasons for the focus on doctoral degree over master's degrees (mainly the traditional disciplinary and professional master's degrees) are:

- Considerations about master's program tend to be an offshoot of broader program quality discussions about doctoral programs (cf. Glazer-Raymo 2005)
- Discussions of the specialized nature of the degree either relate them to professionalization of occupations (Wilensky 1964) and thus very profession-specific tracks, making the discussion into a "supply and demand" argument (cf. Hays-Thomas 2000) or focus on the vague vocation direction of many disciplinary masters (Bartlett 2004)
- The personal and public costs and accrued benefits involved and derived from doctorate degrees
- The high attrition rates based on 40–70% attrition in face-to-face programs and 10% to 20% higher rates in online programs (Ames et al. 2018)
- The many personal, interpersonal (supervision), and programmatic structure issues influencing doctoral degree completion
- Employability (the need) of doctoral degree graduates

Per the ISCED description, a master's level degree "is often designed to provide participants with advanced academic and/or professional knowledge, skills and competencies, leading to a second degree or equivalent qualification" (p. 89). These can be by course-only (with or without a capstone or external placement requirement) or include a research component. Coursework is more complex in content and theoretical in nature than a bachelor degree, but may include practical components based on state-of-the-art research. Bachelor degree with an honors additional year is included as a master's degree equivalent. "Highly-specialised professional studies of similar or greater cumulative duration in tertiary education (e.g. medicine, dentistry, veterinary science and in some cases law or engineering) which cover – in both breadth and depth – an equivalent amount of content, though typically without the preparation of a thesis or dissertation, are also included at this level" (p. 91). Based on these inclusions, master's degree programs equate to minimum of 5 years, although some master's degrees are 1 year of full-time study

and most taking 2 years to complete if taken on a full-time basis. Additionally, there are joint master's degree programs linked to specialized professional degrees as well as joint disciplinary master's degrees (e.g., MA) and professional program degrees (e.g., MBA).

Doctoral degrees are, for the most part, an advanced research qualification in academic and professional fields. As per the ISCED Level 8 description, doctoral degrees or the equivalent are "devoted to advanced study and original research and are typically offered only by research-oriented tertiary educational institutions such as universities" (p. 97). Completion of the degree "usually concludes with the submission and defence of a thesis, dissertation or equivalent written work of publishable quality, representing a significant contribution to knowledge in the respective field of study" (p. 98). Program duration is normally about 3 years of full-time study; however, completion usually takes longer. Completion of doctoral degrees has been a cause of concern over the years. Four themes emerge from the concerns noticeably discussed in the literature: time to completion; attrition and retention; stress, exhaustion, and anxiety; and student-life balance (Jones 2013). These themes have led to a rethinking of doctoral degree program structures to mitigate some of these challenges. A more detailed discussion about the different types of doctoral degrees now available is presented in this volume's chapter written by Padró, Green, and Templeton.

As noted, there are personal and public viewpoints regarding the value of postgraduate education. These viewpoints often take the form of utility (preferences) in the literature based on economic benefit. The perspective of benefit is nowadays limited to reduced government involvement based on concerns of inappropriate redistribution of the cost to the individual who generates the primary benefit. As Frederick Hayek (2011/1960) wrote:

> Probably the only general principle that can be laid down with respect to subsidies is that they can never be justified in terms of the interest of the immediate beneficiary (whether it be the provider of the subsidized service or its consumer) but only in terms of the general benefits which may be enjoyed by all citizens. . . Subsidies are a legitimate tool of policy, not as a means of income redistribution, but only as a means of using the market to provide services which cannot be confined to those who individually pay for them. (p. 381)

Based on this line of reasoning, paying for a postgraduate degree should be a balance between the beneficiary of the degree (the individual) and the government. In Australia, for example, the overall mix of private to public benefits at the bachelor degree level is 45% private benefits (as measured by post-tax earnings premiums) to 55% public (as measured by deviations in GNP less the private benefits), which is why Deloitte (2016) suggests that the burden of payment reflects this mix. Unfortunately, personal benefit in terms of remuneration varies in accordance to the industry sector of employment (Carnevale et al. 2011; Deloitte 2016).

Amartya Sen provides a different lens for determining the value of postgraduate education based on capability as a means to attain quality of life (Drèze and Sen 1989). Increased capabilities equate with quality of life regarding benefits accrued to individuals and the public at large based on what individuals are able to do

(*functionings*) through personal agency based on how social arrangements are evaluated (Sen 1992, 2003). "If life is seen as a set of 'doings and beings' that are valuable, the exercise of assessing the quality of life takes the form of evaluating these functionings and the capability to function" (Sen 2003, p. 44). Decisions such as government funding of this type of education based on benefits take on a more personal but non-egotistical, upward mobility approach in the sense that this reflects increased capabilities to function and less on the "welfarist" emphasis that current utility discussions provide due to "public good" overriding market mechanisms to ensure capabilities are met (Sen 1993, 1999).

Outside the "who pays" and "who benefits the most and thus should bear the cost" arguments, two key features of decision-making prevail in determining value of postgraduate degrees: choice based on prospects and reference in terms of desired outcomes. According to prospect theory originally advanced by Kahneman and Tversky (1979), evaluation of choice is reference-based, with the reference point varying according to the objective. There is a diminishing sensitivity to changes in value as these decrease or increase leading to risk aversion when gains are shown (taking the sure bet over the long shot) and risk seeking to stanch losses (preferring a potential high risk loss over a small but sure loss). Yet, losses are felt more strongly than gains, even when they are similar in amount in the calculus used to determine gain or loss. In other words, loss aversion sees losses as threats that need attention than the pursuit of opportunities. Let us continue the discussion using these three perspectives.

Reference points for individuals can be difficult to pin down due to their unique circumstances and interests. Learning for its own sake cannot be ignored in favor of employability, job progression or higher compensation, and status seeking in all instances as it can still be a motivator. Biopsychological characteristics (e.g., family, social networks) shape points of reference driving choice and evaluation parameters through environmental interactions in what are, in effect, nested systems of different level interconnections (Bronfenbrenner and Morris 2006). These interactions from lived experience shape individual value complexes influencing expectations and capability to succeed in a university environment (Astin 1985, 1993; Combs and Snygg 1959).

Diminishing sensitivity comes to play in terms of desired outcomes driving the individual considering or in actual pursuit of a postgraduate degree. For the most part, the reference points relate to the positive transformative capacity the individual will receive from the degree and the possible transitions possible from the transformation (Baxter-Magolda 2014; Mezirow 1997). While the curriculum itself generates personal transformation (Press and Padró 2017), personal transformation is typically referenced to externalities such as employability and job mobility, compensation, career advancement, status attainment, etc. These externalities reflect the dynamics of job churning – the measure of job stability based on hirings, firings, and net job creation and destruction (Askenazy and Moreno Galbis 2007) – related to changes in career mobility. The changing context affects individual decisions on whether or not to pursue postgraduate degrees as well as sector expectations regarding university degree attainment. At present, in developed countries, pathways

and tracks within the workforce are occupation hierarchy based rather than the old, traditional industrial model of moving from one job type to another within an organization (Carnevale et al. 2011). Ideally, the increased capability resulting from earning second and third cycle degrees ostensibly increases personal choice opportunities and upward social mobility through increased earnings and status.

Diminishing sensitivity under these circumstances is palpable when the value of the postgraduate degree is reduced due to oversupply of graduates and/or a diminution of interest in the qualification itself. One decision that falls under this consideration is pursuing a postgraduate degree because it increases the opportunities of employment or advancement even if the costs of the postgraduate degree does not provide any or only limited returns based on expectations.

As Joseph Schumpter (2003/1942) himself presciently wrote, "[one] of the most important features of the later stages of capitalist civilization is the vigorous expansion of the educational apparatus and particularly of the facilities for higher education" (p. 152). The resulting leveling of return from the postgraduate degree means there are times when recipients will earn less than those with lower educational attainment within sector or when compared to other occupations (Carnevale et al. 2011). Yet, the pursuit of the postgraduate degree is a "safe" decision because it does improve the chances of getting a remunerated position in a highly competitive market. Another example of diminishing sensitivity can be ascribed to the often-noted decision to return to the university when unemployed for upskilling in order to increase the probability of getting a job. This is a high-risk proposition, but it is seen as a viable strategy because, at least on paper, the upskilling should make the postgraduate degree recipient more attractive to employers. A third example of diminishing sensitivity is individuals using a postgraduate degree to change careers. Often, the lack of previous experience in the new occupational sector can create employment challenges for which the curriculum cannot completely compensate, making this strategy a high-risk proposition as well, especially in a highly competitive job market. These last two examples also evidence how not having a job or dissatisfaction with a current occupation becomes a loss. Arguably, opportunity thinking (which more closely resembles the first example) translates to loss avoidance due to unemployment or highly dissatisfaction with a current occupation. The second example relates to acquiring a job first. Choice seems directly or indirectly based on personal knowledge of worker flows as noted at the beginning of the chapter. The third example is a satisfaction-based strategy. Actuating preference choices can be a high-risk strategy; nevertheless, it can be preferable to maintaining *status quo*.

Reference points for government actions and decisions are dependent on policy formation mechanisms. These are negotiated references, usually defined and driven by socioeconomic goals. Efficiency measures are important because these are accountability proxies. The key drivers of effective government action are impact and intent based on accepted standards of conduct to produce desired outcomes (Dill and Van Vught 2010; Hart 1997; Padró and Green in press).

When it comes to higher education, impact has become highly associated with dissemination of information to increase the human and intellectual capital of the

workforce and the creation of new knowledge that can advance regional, national, and international economic well-being. Higher education in general and universities in particular have become trapped in their own success. What Massy (2016) referred to as the joint production of teaching and research has yielded major results, especially since the end of World War II. At the nexus point between teaching and research is the research output created by the teaching of postgraduate students (Clark 1997). Most important to governments and prospective and current students has been the economic gains for university degree graduates at the undergraduate and postgraduate levels that are significantly higher than for secondary school completers as noted in many developed countries (e.g., Carnevale et al. 2011; Deloitte 2016). Governments are also interested in harnessing and turning the intellectual capital from university-based research performed by academic staff and postgraduate students into fungible goods that generate revenue for universities. Commodification is a more apt term than commercialization in that it reflects the broader social development of economization, where "results are predominantly interpreted and assessed on the basis of economic criteria" (Radder 2010, p. 4), with research output serving as pseudo-commodities in that academics and postgraduate students seldom get adequately compensated for their output or discoveries (Kaupinnen 2014). The concern, however, is that universities will cross-subsidize research from teaching fund surpluses in order to encourage and/or maintain the capacity to produce revenue-generating intellectual property the university can sell (cf. Norton 2015).

Governments also consider social impacts of higher education such as access, equity, and quality (Helmeid 2010), all of which are embedded within the massification movement found in higher education across the world. The last impact, that of quality, is typically linked with employability, the ultimate policy end game in which value is based on a combination of personal benefits and public good. The idea is that increased personal capacity benefits the individual as well as the broader community. Quality concerns are implicit in policy debates on employability concentrating "on the issue of whether students have the appropriate skills, knowledge, commitment or business acumen to do the job in question" (Brown et al. 2002, p. 110). Consequently, in countries such as Australia, public funding has been partially linked with employability capacity creation (Bridgstock 2009). The extent of success will be discipline or profession specific, as has already been noted. For example, postgraduate study significantly improves job prospects in Australia, as 69% of coursework master's and 78% of research master's or PhD science graduates seeking full-time work were successful in finding a job in 2014 (Norton and Cakitaki 2016). More recent data show improvement in these numbers: 86.1% of postgraduate coursework graduates were in full-time positions in 2017, a 1% increase over 2016 (Department of Education and Training 2018).

Loss aversion from a public policy perspective centers around maximizing the benefits accrued from expenditure based on national needs and priorities. Education of all levels is an investment proposition, especially when the provision of lifelong learning opportunities at the national level is a priority for governments, as part of a

desire to achieve full employment and the eradication of poverty (UNESCO 2015). Key are the following two statements by Mingat, Tan, and Sosale (2003):

> Policymakers face two main types of problems in formulating policies in education: setting priorities in the placement of intervention and choosing the right instruments for intervention. (p. 9)
>
> The impact analysis generally will identify two types of inputs or processes: those with a positive influence on schooling outcomes and those whose impact is either nil or negative. For inputs in the latter category, the implications clearly are not to expand investments in them, and indeed to reduce investments to the extent possible, especially when the impact is negative. (pp. 42–43)

Also key is the long-standing view by the World Bank that higher education is a Damoclean sword because, in one hand, universities play an important part in economic growth through increased personal productivity returns and long-term gain returns from basic research and technological development (Rollin 1995). On the other hand, as Rollin also points out, investment in higher education provides lower social rates of return (e.g., poverty reduction) than investment in primary and secondary education.

Postgraduate education has a definite place within the policy scheme as it aligns with lifelong learning and increase in intellectual capital that normally leads to productivity gains through higher skill contributions and increased opportunity to be part of or directly create technological advances (through providing an environment for creative pursuits that lead to innovations). The myriad discussions surrounding doctoral level degrees dance around many of the aspects of loss aversion. The high noncompletion rates combined with the models discussions are very much related to loss aversion in terms of university resources, alignment to different employment opportunities, overall potential contribution to national intellectual capital, and personal risks (opportunity and opportunity costs, personal sacrifices, and financial burden considerations). For professional degrees such as those in medicine, law, dentistry, veterinary sciences, and the like the issue of loss aversion from a public policy perspective does not seem to be as critical or nuanced discussion because of the well recognized and accepted contributions to society that most of the professions provide. From a public policy perspective, the issues are more of number of practitioners and the number of universities providing these programs due to the high cost of many of these programs (e.g., medicine, dentistry).

The lack of discussion regarding master's degrees or equivalents under ISCED 7 represents the ambivalence and resulting uncertainty that seems to surround the degree (cf. Glazer-Raymo 2005). Like most discussions about throughput process due to their intermediary rather than terminal nature, interest primarily rests with first and third cycle degrees as the foundational and specialized/expertise aspects these represent, particularly in the eyes of academics and policy-makers. If the scant literature is to be taken at face value, loss aversion may not be as much of a public concern outside professional licensing or recognition through regulatory bodies as much as it may be one for higher education institutions providing these degrees and

some of the professional bodies, such as psychology and business with the MBA, for whom the degree plays an important part. It is difficult to argue how these degrees have benefitted from the commodification of higher education and therein the risk of maintaining market viability to make them sustainable over the long haul, in particular given the challenge brought to them by the advent of microcredentials available through online delivery and related technological advances. This brings to the fore questions of who provides the recognition of the learning experience along with those of content.

Outside coursework expectations in doctoral degree programs when they exist, all of education is "bum on seats" based, meaning that education is based on classroom time and related out-of-class homework activity as measured by the student credit hour (SCH) in the US system. The charge of conflation is one that at a *prima facie* level potential skills and abilities require some defense (Halavais 2013). Online programs with asynchronous interactions directly challenge that need. Moreover, master's degrees represent a means of transforming personal experience into academic recognition through the integration of theory into practice. Knowledge, especially advanced knowledge, has to be treated as a raw material that is leveraged into an asset (Slaughter and Rhoades 2004). The ongoing pressure for other forms of recognition of experience in academic frameworks challenges that premise. For instance, microcredentials and different delivery and recognition mechanisms can act as a catalyst to look ways to shed "excess credits" as a means of increasing graduation rates, changing the way degrees are structured (Wellman 2010). Unless universities are able to demonstrate relevance, loss aversion suggests other mechanisms will prevail outside the bridging aspect to third cycle, first-professional degrees or inter- or trans-disciplinary learning experience recognition. This is possible for universities if they are able to articulate how learning experiences facilitated through the program curriculum is the result of a mediation "between the professional life of students, teaching staff and administrators" (Press and Padró 2017, p. 315) and external stakeholder expectations and requirements.

Loss aversion sensed by potential and actual students is a more complicated proposition. As already stated, educational experiences are recognized as transformative events because of the potential to improve quality of life through improved capability (e.g., UNESCO 2015). However, education provided through recognized educational institutions such as schools and universities are guided by the *habitus* reflective of the cultural capital per Bourdieu and Passeron (2000) and referential to policy and broader social expectations encompassing what Foucault (1980) termed *governmentality*. These external perspectives do shape the environmental expectations that potential and actual students and employers have, but at the same time, these can be inhibitors adding to the issues influencing success. Foucault (2005/1982) suggested that there is a separation between an authoritarian fixing of identities from the knowledge of the subject self, which in essence describes the boundary between formal educational practices and a constructivist view toward individual learning.

Results from transformation through education ultimately are ontological through praxis because it is about the individual being a productive being. The becoming proposition, the throughput, is important, but it is not an ultimate goal onto itself.

Education, in this respect, becomes an acculturation proposition if, for no other reason, the individual student has to adapt to the curricular environment and the personal interrelationships which that environment generates. What makes it difficult to see is representative of the difficulty in describing the self. For me as for others, Heidegger's (2008/1927) concept of *Dasein* encapsulates the paradox as well as any other explanation. Identification is a tricky proposition as it operates across differences between self and the environment based on discoursive work to produce what Hall (1996) termed "frontier effects" from interactions between symbolic boundaries. Bronfenbrenner's bioecological model and Astin's I-E-O model identify many of the external influences through networks and informal learning propositions impacting a student's ability to adapt and succeed in a formal university setting. The connection between the student and the desired outcome or result is expressed in Bronfenbrenner and Ceci's (1994) potential developmental outcomes:

- Differentiated perception and response
- Directing and controlling one's own behavior
- Coping successfully under stress
- Acquiring knowledge and skill
- Establishing and maintaining mutually rewarding relationships
- Modifying and constructing one's own physical, social, and symbolic environment (p. 569)

A person who has become a student continually navigates between these antecedents, often in tacit form when forming their new knowledge (Wagner and Sternberg 1985). Thus, there is the one world or space of the student's self – all of the familial and social networks, prior education experiences (formal and informal), interactions between self and organizational entities (private and public), personal value complex derived from all of these – interacting with another world or space, that of the formal educational system. The adaptation and learning processes are partially processed in each world, but the nexus between the two worlds or spaces is probably better understood as a third world or space. Bhabha's (1994) notion of "hybridity" in this third space is an appropriate description because the interweaving of academic requirements embedded into the curriculum and other university processes and personal identity provides a capacity to generate a new sense of self (and personal meaning). In this regard, "hybridity" represents an opposition to the view of essentialism that often prevails in learning and teaching discussions, i.e., immutable fixed properties that does not allow for individual contextualization of identity, fitness, and belonging within a profession (Meredith 1998). Hybridity occurs when there is a new "reality," sense of identity, or creation of knowledge that results from the interacting of the competing constituencies and their interests (Bhabha 1994). What becomes apparent is the polycontextual, multivoiced, and multiscripted learning contexts as Gutiérrez, Baquedano-López, and Tejeda (1999) found. Utilizing a third space approach makes sense in education at all levels because "teachers and students bring different instructional, home, and community knowledge bases and Discourses to bear on classroom texts" (Moje et al. 2004, p. 41).

An enactive proposition within the third space is Weick's (1995) concept of sensemaking. There is a natural naturally existing in the interactions between the three spaces due to tacitness in the sense that expectations or ideas are not always clearly identified, often hard to divine and expectations as a result difficult to accomplish. Accordingly, a student needs to figure out a way to acquire, discern, and then understand the strictures of organizational rules and symbols and the flows of information (Weick 1995; Zhang 2006). Applying an observation from Hayek (1945) to the notion of sensemaking in academia, the student's approach and awareness capacity in certain regards are not clearly organized and do not exist "in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess" (p. 519). Sensemaking that is happening is bounded how tolerant an individual is to negative effects in the pursuit of personal satisfaction. Perception from this space and the self-knowledge gained is an inductive process of observed actions and reactions (Ryle 2009/1949). One result from the manipulation of the manyfold concerns represented by the various network elements performed by the individual is the formation of knowledge in more concrete terms (Heidegger 2008/1927). This is one reason risk comes to play in learning situation, which, while recognized, is not directly accounted for in learning and teaching models. Outcomes are linked to gains and losses relative to a neutral reference point (considerations used to trigger a decision) based on what the person's preference for knowledge, with losses looming larger than gains in terms of what the person learns (Kahneman and Tversky 1979). The reference point, however, can shift based on the framing of desired outcomes (Tversky and Kahneman 1981). "Framing is controlled by the manner in which the choice problem is presented as well as by norms, habits, and expectancies of the decision maker" (Tversky and Kahneman 1986, p. S257). Choices made, alas, are not always rational as the maximization of benefits is not always reflected in what a person enacts, whether in learning or other propositions.

As noted earlier and often repeated in the chapters in this volume, choices for attending postgraduate education programs at the ISCED 7 and 8 levels are highly personal in nature. There are greater external rewards granted by the marketplace and society for pursuing the additional specialization in certain disciplines and professions. And the additional bounding elements relating to cultural capital that shape the educational experiences and the seeds of success and failure are present. Success favors those who are able to adapt or fit neatly within the confines of cultural capital habitus. The risk of failure is there for those who are not able to fully adapt because they cannot (ability or insufficient or lack of motivation) or will not (cultural and/or religious considerations or ethical challenges to certain traditional standards of practice within the degree process, discipline, or profession). There are programmatic limitations within the way the program is designed that ensure fairness on one level that also represent the compromise of providing the learning opportunity to as many individuals as possible. On the other hand, these programmatic limitations also mean that those individuals wanting to be students may not be able to qualify for admissions because of a lack of certain prerequisites, succeed because of the need for more resources than the university can provide, or cannot accept a different way of

completing academic requirements. Embedded within this quandary is the challenge of meritocratic expectations within a democratic demand for access and equity. Also embedded, often unseen, are different forms of biases based on preferences for doing things in a certain way or, even more problematically, cultural prejudices that find themselves into actual practice even if policies and procedures say these are not in place and are not tolerated. My chapter in this volume addresses some of these issues, and thus I will not elaborate on this point any further.

What these last few paragraphs represent is that loss aversion comes in many forms for students. Dissatisfaction with what has been learned, how it was taught (sometimes even by whom it was taught), the lack of support and understanding, the feeling of nonacceptance and alienation for whatever reason, the view that putting up with the degree experience is not worth it (return on investment, financial burden, compromise of personal and/or cultural values, general frustration, etc.) can easily translate to dropping out. The immediate question is if the dropping out is permanent or merely to another institution in the hope that the experience is more positive and/or the perception that what is being received at another university is more worthwhile in terms of what the individual in question is expecting from their educational experience. This is true for undergraduates as it is for postgraduate students. The difference is that the stakes are higher for individuals, higher education institutions, and governments because of higher costs of instruction and workforce development and participation issues. Postgraduate education represents higher order levels of knowledge that are expected to provide higher responsibility tasks to drive a higher and more diversified economy. These individuals are often also expected to generate greater returns to the community in general from sharing their information, spending more, and paying higher taxes. Putting aside the argument of who benefits the most, the capability to graduate with a postgraduate degree and fill these "higher skill" positions in the workforce is the basis for improved quality of life for the individuals achieving the degree and the public at large.

This discussion began with the question, "what is the purpose of postgraduate education?" This question serves as a proxy for the corollary question, "what is the value of postgraduate education?" The chapters in this volume address these points well, all be it from different perspectives. The approach taken here has been to identify issues and concerns from the viewpoint of policymaking. What I hoped not to do was to prescribe a specific point-of-view, although personal perspective shaped the discussion. I acknowledge the biases, but these are presented as a means to identify "talking points" for readers to consider. Academics will respond based on their experiences and views. Nonacademic staff reading this volume will also shape their judgments of what they read based on their experience. Similarly, policymakers, people from the corporate world, and other nonacademics. There is no universal point of view simply because our individual third spaces provide us with a different sense of what is and what is not. To conclude, postgraduate education does serve a specific purpose in a national framework. Parts of it are controversial. Some aspects need to be thought out further. New delivery mechanisms, technological developments, socioeconomic pressures, and needs no longer allow postgraduate education to be treated as "a given," especially by universities because these are

challenging the hegemony of universities as the chief providers and legitimacy of a model that has strong roots in the stoas of ancient Athens and the Confusian schools. Success has allowed postgraduate education to evolve from von Humboldt's exhortations at the beginning of the Napoleonic era to the multiversity described by Clark Kerr in 1963. The challenges provide fodder for continued evolutionary success and sustainability if the value of postgraduate education is not treated as a static given, but as a basis for collaborative discussion between academics, employers, potential and former graduates, and policy-makers on how to improve it to continue making it "fit for purpose."

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References

Ames, C., R. Berman, and A. Casteel. 2018. A preliminary examination of doctoral student retention factors in private online workspaces. *International Journal of Doctoral Studies* 13: 79–107.

Askenazy, P., and E. Moreno Galbis. 2007. The impact of technological and organizational changes on labor flows. Evidence on French establishments. *Labour* 21 (2): 265–301.

Astin, A.W. 1985. *Achieving educational excellence*. San Francisco: Jossey-Bass.

Astin, A.W. 1993. *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass.

Bartlett, A.C. 2004. Is it terminal? Re-evaluating the master's degree. *The Journal of the Midwest Modern Language Association* 37 (2): 26–29.

Baxter-Magolda, M.B. 2014. Self-authorship. In *In search of self: Exploring student identity development: New directions for higher education, Number 166*, ed. C. Hanson, 25–34. San Francisco: Jossey-Bass.

Bhabha, H.K. 1994. *The location of culture*. London: Routledge.

Bourdieu, P., and J.-C. Passeron. 2000. *Reproduction in education, society, and culture*. 2nd ed. London: Sage.

Bridgstock, R. 2009. The graduate attributes we've overlooked: enhancing graduate employability through career management skills. *Higher Education Research & Development* 28 (1): 31–44.

Bronfenbrenner, U., and S.J. Ceci. 1994. Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review* 101 (4): 568–586.

Bronfenbrenner, U., and P.A. Morris. 2006. The bioecological model of human development. In *Handbook of child psychology*, ed. W. Damon and R.M. Lerner, 6th ed., 793–828. Hoboken: Wiley.

Brown, P., A. Hesketh, and S. Williams. 2002. Employability in a knowledge-driven economy. *Journal of Education and Work* 16 (2): 107–126.

Burgess, S., J. Lane, and D. Stevens. 2000. Job flows, worker flows, and churning. *Journal of Labor Economics* 18 (3): 473–502.

Carnevale, A.P., S.J. Rose, and B. Cheah. 2011. *The college payoff: Education, occupations, lifetime earnings*. Washington, DC: Georgetown University Center on Education and the Workforce.

Cassuto, L. 2015. The degree for quitters and failures. *The Chronicle of Higher Education* 69 (31).

Clark, B.R. 1997. The modern integration of research activities with teaching and learning. *Journal of Higher Education* 68 (3): 241–255.

Combs, A.W., and D. Snygg. 1959. *Individual behavior: A perceptual approach to behavior*. New York: Harper.

Deloitte Access Economics. 2016. *Report for the Australian Government Department of Education and Training: Estimating the public and private benefits of higher education*. Retrieved from the Department of Education and Training website, https://docs.education.gov.au/documents/estimating-public-and-private-benefits-higher-education

Department of Education and Training. 2018. *2017 Graduate Outcomes Survey: National report*. Retrieved from QILT website, https://www.qilt.edu.au/docs/default-source/gos-reports/2017/2017_gos_national_report_final_accessiblea45d8791b1e86477b58fff00006709da.pdf?sfvrsn=ceb5e33c_4

Dill, D.D., and F.A. Van Vught. 2010. Introduction. In *National innovation and the academic research enterprise: Public policy in global perspective*, ed. D.D. Dill and F.A. Van Vught, 1–26. Baltimore: John Hopkins University Press.

Drèze, J., and A. Sen. 1989. *Hunger and public action*. Oxford: Clarendon Press.

Foucault, M. 1980. *Power/knowledge: Selected interviews & other writings 1972–1977* (ed: Colin Gordon). New York: Pantheon Books.

Foucault, M. 2005/1982. *The hermeneutics of the subject: Lectures at the College de France 1981–1982* (ed: Gros, F.; trans: Burchell, G.). New York: Picador.

Giordano, M.J. 2000. Revaluing the master's degree. *PMLA* 115 (5), 1271–1273.

Glazer-Raymo, J. 2005. *Professionalizing graduate education: The Master's Degree in the marketplace. ASHE Higher Education Report, Volume 31, Number 4*. San Francisco: Jossey-Bass.

Gutiérrez, K.D., P. Baquedano-López, and C. Tejeda. 1999. Rethinking diversity: Hybridity and hybrid language practices in the third space. *Mind, Culture and Activity* 6 (4): 286–303.

Halavais, A. 2013. Microcredentials on the open web. Paper presented at the 14th Annual Conference of the Association of Internet Researchers, Denver. Retrieved from www.http://spir.aoir.org/index.php/spir/article/download/777/363

Hall, S. 1996. Who needs identity. In *Questions of cultural identity*, ed. S. Hall and P. du Gay, 1–17. London: Sage.

Harriman, P.L. 1938. The Master's degree. *The Journal of Higher Education* 9 (1): 23–28.

Hart, H.L.A. 1997. *The concept of law*. 2nd ed. Oxford, UK: Oxford University Press.

Hayek, F.A. 1945. The use of knowledge is society. *The American Economic Review* 35 (4): 519–530.
Hayek, F.A. 2011/1960. *The constitution of liberty*. Chicago: University of Chicago Press.
Hays-Thomas, R.L. 2000. The silent conversation: Talking about the master's degree. *Professional Psychology: Research and Practice* 31 (3): 339–345.
Heidegger, M. 2008/1927. *Being and time* (trans: Macquarrie, J., and E. Robinson). New York: HarperPerennial.
Helmeid, E. 2010. *World conference on higher education 2009: Final report*. Paris: UNESCO. Retrieved from http://unesdoc.unesco.org/images/0018/001892/189242e.pdf
Jones, M. 2013. Issues in doctoral studies – Forty years of journal discussion: Where have we been and where are we going? *International Journal of Doctoral Studies* 8: 83–104.
Kahneman, D., and A. Tversky. 1979. Prospect theory: an analysis of decision under risk. *Econometrica* 47: 263–291.
Kaupinnen, I. 2014. Different meanings of "knowledge as commodity" in the context of higher education. *Critical Sociology* 40 (3): 393–409.
Kerr, C. 1963. *The uses of the university*. Cambridge, MA: Harvard University Press.
Luhmann, N. 1995. *Social systems* (trans: Bednarz, J., and D. Baecker). Stanford: Stanford University Press.
Massy, W.F. 2016. *Reengineering the university: How to be mission centered, market smart, and margin conscious*. Baltimore: John Hopkins University Press.
Maturana, H., and F.J. Valera. 1980. *Autopoiesis and cognition: The realization of the living*. Dordrecht: D. Reidel Publishing Company.
Meredith, P. 1998. Hybridity in the third space: Rethinking bi-cultural politics in Aotearoa/New Zealand. Paper Presented to Te Oru Rangahau Maori Research and Development Conference, 7–9 July 1998, Massey University, 7 pp.
Mezirow, J. 1997. Transformative learning: Theory to practice. In *Transformative learning in action: Insights from practice – New directions for adult and continuing education, No. 74*, ed. P. Cranton, 5–12. San Francisco: Jossey-Bass.
Mingat, A., J.-P. Tan, and S. Sosale. 2003. *Tools for education policy analysis*. Washington, DC: World Bank.
Moje, E.B., K.M. Ciechanowski, K. Kramer, L. Ellis, R. Carrillo, and T. Collazo. 2004. Working toward third space in content area literacy: An examination of everyday funds of knowledge and discourse. *Reading Research Quarterly* 39: 38–72.
Norton, A. 2015. *The cash nexus: how teaching funds research in Australian universities*. Grattan Institute Report No. 2015-9. Retrieved from Grattan Institute website, https://grattan.edu.au/wp-content/uploads/2015/10/831-Cash-nexus-report.pdf
Norton, A., and B. Cakitaki. 2016. *Mapping Australian higher education 2016*. Grattan Institute Report No. 2016-11. Retrieved from Grattan Institute website, https://grattan.edu.au/wp-content/uploads/2016/08/875-Mapping-Australian-Higher-Education-2016.pdf

Organisation for Economic Cooperation and Development [OECD], European Union, and UNESCO Institution for Statistics. 2015. *ISCED 2011 operational manual: Guidelines for classifying national education programmes and related qualifications*. Paris: OECD Publishing. Retrieved from http://unesdoc.unesco.org/images/0023/002323/232343e.pdf

Padró, F.F., and J. Green. in press. Education administrators in Wonderland: Figuring out how policy-making and regulatory compliance when making decisions. In *Education and the law: Considering the legal context of schools*, ed. K. Trimmer, R. Dixon, and Y. Findlay. Dordrecht: Springer International Publishing AG.

Press, N., and F. Padró. 2017. Educating for a profession: Curriculum as transformation and curriculum transformation. In *Research and development in higher education: Curriculum transformation*, vol. 40, ed. R.G. Walker and S.B. Bedford, 313–322. Sydney.

Radder, H. 2010. The commodification of academic research. In *The commodification of academic research*, ed. H. Radder, 1–23. Pittsburgh: University of Pittsburgh Press.

Rollin, K. 1995. Two positions in the international debate about higher education: The World Bank and UNESCO. Paper presented at a meeting of the Latin American Studies Association, Washington, DC, 28–30 September, 18 pp.

Ryle, G. 2009/1949. *The concept of mind*. London: Routledge.

Schumpeter, J.A. 2003/1942. *Capitalism, socialism and democracy*. London: Routledge.

Sen, A. 1992. *Inequality reexamined*. New York: Russell Sage Foundation.

Sen, A. 1993. Capability and well-being. In *The quality of life*, ed. M. Nussbaum and A. Sen. Oxford: Clarendon Press.

Sen, A. 1999. *Development as freedom*. New York: Anchor Books.

Sen, A. 2003. Development as capability expansion. In *Readings in human development*, ed. S. Fukuda-Parr and A.K. Kumar, 41–58. New Delhi: Oxford University Press.

Slaughter, S., and G. Rhoades. 2004. *Academic capitalism and the new economy: Markets, state, and higher education*. Baltimore: John Hopkins Press.

Teichler, U. 2008. Indicators concerning rationales and modes of doctoral study and research in economically-advanced countries. In *UNESCO forum on higher education, research and knowledge trends and issues in postgraduate education: Challenges for research international experts' workshop, 5–7 March, 2008, Dublin City University (DCU) Dublin, Ireland – Final report*, ed. UNESCO, 24–27. Retrieved from http://unesdoc.unesco.org/images/0016/001607/160744e.pdf

Tversky, A., and D. Kahneman. 1981. The framing of decisions and the psychology of choice. *Science* 211: 453–458.

Tversky, A., and D. Kahneman. 1986. Rational choice and the framing of decisions. *The Journal of Business* 59 (4): S251–S278.

UNESCO, ed. 2008. Final views from the workshop. In *UNESCO forum on higher education, research and knowledge trends and issues in postgraduate education: challenges for research international experts' workshop, 5–7 March, 2008, Dublin City University (DCU) Dublin, Ireland – Final report*, ed. UNESCO,

5–10. Retrieved from http://unesdoc.unesco.org/images/0016/001607/160744e.pdf

UNESCO, ed. 2015. *Incehon Declaration – Education 2030: Towards inclusive and equitable quality education and lifelong learning for all*. Paris: Author.

Wagner, R.K., and R.J. Sternberg. 1985. Practical intelligence in real-world pursuits: The role of tacit knowledge. *Journal of Personality and Social Psychology* 49 (2): 436–458.

Weick, K.E. 1995. *Sensemaking in organizations*. Thousand Oaks, CA: Sage Publication.

Wellman, J. 2010. Making it real: Incorporating cost management and productivity improvements into financial decisions. *New England Journal of Higher Education* 24 (3): 30–32.

Wilensky, H.L. 1964. The professionalization of everyone? *The American Journal of Sociology* 70 (2): 137–158.

Zhang, Z. 2006. What is lived space? *Ephemera* 6 (2): 219–223.

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Part I

University Contexts Affecting Postgraduate Education

Contexts, Debates, Histories, and Futures of Postgraduate Education in Higher Education

1

Ronel Erwee, Meredith A. Harmes, Marcus K. Harmes, Patrick Alan Danaher, and Fernando F. Padró

Contents

Abstract

Reimagining the development and administration of contemporary universities in the twenty-first century must include a reconsideration of the purposes, character, and effects of postgraduate education. Such a reconsideration must in turn entail interrogating the contexts in which postgraduate education is enacted, the debates attending those contexts, the histories marking the growth of key elements of postgraduate education, and also potential alternative futures for prospective initiatives and innovations in postgraduate education.

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In foretelling the subsequent chapters in the handbook, clustered around five sections, this chapter assembles these contexts, debates, histories, and futures in ways that highlight that the genealogies of postgraduate education, as well as its current manifestations, are by no means consistent, even, or teleological. On the contrary, developments in one part of the world were resisted for considerable time in other parts, as illustrated by the widely divergent dates of the first awards of the PhD degree in different countries. At the same time, the chapter also accentuates the commonality and consistency of certain themes related to postgraduate education, including the expected contributions by doctorates to generating new knowledge, the sometimes countervailing pressures that such knowledge should have practical applications and implications, and currently the seemingly irresistible rise and global impact of neoliberalism in relation to doctoral study and supervision.

Keywords
Digital futures · Doctoral supervision · Historical perspective · Managing doctoral programs · Neoliberalism · Postgraduate careers · Postgraduate education · Postgraduate pedagogy · Student–supervisor relationships · University contexts

Introduction

Postgraduate study is undergoing transformation, making it timely but also exciting to consider current experiences and evolving trends in postgraduate education. Earlier volumes and handbooks on higher education appeared in the 1970s (see for example Knowles 1970, 1977), but since then the expectations of stakeholders of higher education, the programs and their delivery, the scope of and ambitions for higher education, and the pressures and responses have all changed markedly. There has in turn been a proliferation of writing on higher education in general and postgraduate education in particular, including multiple volumes on good supervision (see for example Kamler and Thomson 2014; Taylor et al. 2018), as well as the workplace changes brought about by a rise not only in the numbers of students undertaking postgraduate study but also in the amount of university teaching undertaken by postgraduate casuals (Bettinger et al. 2016). Handbooks for enhancing higher education, for "future proofing" it, and for humanizing it now exist (see for example Marshall 2016; McNiff 2016; Mukerji and Tripathi 2017). Internationally, major developments including the Bologna Declaration (1999) have shaped the nature and design of postgraduate study (in the European Union specifically in terms of the Bologna Declaration). More generally, discourses of the "knowledge society" both valorize postgraduate education and also place demands on it in terms of perceived relevance or usefulness. Scholars in the field have called for radical reappraisals of the intentions and delivery of postgraduate education (Åkerlind and McAlpine 2017; De Meyer 2013), and the ubiquitous neoliberalism informs discussion of higher education (Hyatt et al. 2015; Ingleby 2015).

Out of this body of writing, this handbook is distinctive for the focus and value of its chapters and their recommendations. For people who have the intention or desire

to establish a center of higher education, the question arises of what might its executives, its administrators, and its academics need to know about postgraduate education? Perhaps the most important message may be that the field is mutable and volatile, and is one where traditions should be worn lightly. After all, the PhD is now the pinnacle of postgraduate study but was not that long ago considered an innovation, even quite a vulgar one, at some universities. For instance, the Faculty of Arts at the University of Sydney in the 1950s (Sydney had offered PhDs only since 1947) included academics who derided the "awful American" PhD (Forsyth 2014, 28). Now the PhD is entrenched globally not merely as a degree but also as the normal prerequisite to an academic career, making these earlier academic sneers seem quaint. However, the PhD has been joined by a host of other doctorates, professional and educational, not to mention the diverse types of masters and other postgraduate qualifications that continue to evolve and multiply.

Postgraduate Education in Historical Perspective

To gain a clearer sense of the evolutionary, gradual, and even sometimes radical development of postgraduate study, it is worthwhile to open this volume by giving attention to two occasions in the history and development of higher education when universities were in fact "new" and making decisions about their programs, their staff members, their teaching, and their titles. One of these occasions was the rise of the schools in twelfth-century Europe; the other was the emergence of the research university in nineteenth-century Europe, especially Germany, and the importation of the idea and institution to other places, in particular the United States. In both cases, new, often untried means of delivering, assessing, benchmarking, and deploying higher education were seen to be arising. From here, a long distance view of expectations, practices, and changes is gained.

In the schools of the twelfth century, the doctorate referred to what people did and taught as much as to what they had studied and the qualifications that they held. Proceeding from bachelorship to mastership and doctorate was an academic pathway apparent in the organization of medieval universities (Haskins 1957, 24). In the complexity of medieval learning and the activities of different institutions across a continent, generalization is ill-advised and impossible. Nonetheless, the doctorate as an academic entity and an award is historically discernible. In the words of the historian Jacques Verger (1992), "a master or doctor could teach, but this was not indispensable." What the doctorate did indicate, however, was "total mastery of the discipline" (144–145). The Disputation Exercise allowed candidates to show publicly their worthiness to receive the degree (Norton 1909, 116). The doctorate meant that certain responsibilities and in particular certain lecture topics were the reserved activities of the doctors (Rashdall 2010, 209).

The medieval doctorate did not spring forth fully formed. It was the product of practical measures in gathering together scholars with recognized expertise and the force of specific measures such as episcopal injunction, principles of canon law, and political will, as well as the insistence of university masters on the supranational

character of their institutions and their relative freedom from interference from higher powers (in this case the papacy) (Noble 1994, 5). The degree, the title, and the authority that both of these developments gave could sometimes be the product of historical randomness. Thus the Master of Arts in the German academy is called a Doctor of Philosophy (Rashdall 2010, 22). The higher qualifications took a variety of forms and names, and again in the German system the habilitation became an entry point to lecturing in a university (Axtell 2016, 269).

Historians of medieval universities, including Charles Homer Haskins (1957) and D. P. Leinster-Mackay (1978), have insisted that aspects of the teaching and governance of these institutions remain recognizable in their modern successors. However, to grasp fully the evolving nature of postgraduate study and also to understand more of its dynamic character, it is necessary to move further forward in time. Famously, Wilhelm von Humboldt provided an academic and institutional framework for the establishment of the Prussian university that now bears his name. But more importantly he gave impetus to a particular academic structure that facilitated the emergence of the PhD. Humboldt's achievement was not so much stimulating the founding of a university as inspiring a university in which the transmission of knowledge and the furthering of knowledge were both undertaken. In Humboldt's context, that entailed the merging of the teaching at university with the research at the private academy (Noble 1994, 6). These developments had important and cascading implications. Fields of study required years to master, while members of the same discipline judged the work of one another as assessors of doctorates and scholarly societies and publications in what Haskell (1977) has termed the "community of inquiry" (18; see also O'Boyle 1983, 6).

By contrast, the PhD appeared in some higher education contexts as a fully formed, ready to use commodity. Considered an "academic import" from Germany by the historian James Axtell (2016, 267), the PhD came to the universities of the United States often in the person of German holders of PhDs lecturing in America, or Americans who had studied in German universities. Nonetheless, asserting the trajectory between a German model and an American adoption should be done with a clearly nuanced impression of differences (O'Boyle 1983).

Externally, postgraduate study could take place among the instant medievalisms of nineteenth-century architecture. The "majestic halls" of Princeton's Graduate College gave space to residential graduate study among gothic quads and refectory (Axtell 2016, 271; Shand Tucci 2005, 126). Other universities followed suit, creating a neo-medieval context for an Enlightenment course of study with seemingly little thought for the intellectual dissonance of their actions. Yale awarded a PhD to Eugene Schuyler in 1861 and Boston University awarded one to Helen Magill. By 1900 the University of Toronto had awarded one. Elsewhere, Oxford's first PhD was in 1920 and by the 1930s there were over 6000 postgraduate students (not all PhD students) at British universities (Hogan and Clark 1996, 118). But the University of Melbourne did not award a PhD until 1948 (Noble 1994, 73–74).

In time emerged what Kohler (1990) called the "PhD machine" (643) of North American higher education from the 1880s, a rise in the number of students undertaking a PhD driven by its increased recognition as the necessary credential for an academic career but also in professional fields as well.

Emergence into American higher education did not mean slavish imitation. Kohler (1990) pointed out that American graduate programs involved more formal connections between staff members and student than the looser "discipleship" of European models (642).

Doctorates have a long history and have undergone several iterations in terms of what they meant, the authority and status that they bestowed, and the work that they involved. Doctors of Music, Doctors of Divinity, and Doctors of Medicine have graduated from European and American universities. The transition of particular significance is the appearance of the PhD. The *Philosophiae Doctor* as the highest degree is not simply a qualification but also an industry-standard requirement for academic postings. The rise in the number of students undertaking doctoral study has in turn prompted and required organizational and human resources infrastructure, including dedicated centers for postgraduates and professional development for staff members and students.

The relevance, quality, and character of postgraduate study, now an undertaking of several centuries, has long attracted detailed scrutiny. As the pinnacle of postgraduate study, it is the PhD that may be most intensively examined. Importantly, the quality of an institution's PhD has been used as a wider measure of institutional quality. Raymond M. Hughes, the President of Miami University in Ohio, announced in 1925 that his process for selecting staff members was to rank institutions according to the quality of their graduate work. Forty years later, Hayward Keniston of the University of Pennsylvania used the quality of the PhD as the ranking measure for judging the quality of entire academic departments (National Research Council 1995, 10).

However, such scrutiny could turn in both directions. If the PhD could be used as the barometer for measuring institutional quality, that meant that the quality and relevance of the PhD also came under examination. In the United States, the National Research Council (NRC) commissioned and subsequently published *An Assessment of the Research-Doctorate Programs*. In 1995 the same body issued a revised version as *Research Doctorate Programs in the United States: Continuity and Change* (Goldberger et al. 1995). Studies showed more universities offering doctorates and more students undertaking them while also contributing data to allow for policy and planning around higher education. That included ongoing strategizing to increase completion rates, an issue of enduring significance.

Indeed, the rise of what Holligan and Sirkeci (2011) referred to as "audit culture embedded in reputation management, quality control and ranking hierarchies" (45) has made the scrutiny of both quality and relevance more intense than ever. It also makes the contribution of this present volume clear, in the coverage that it offers of a still-evolving world of postgraduate study options, means, quality testing, and processes.

As was noted above, postgraduate study is neither static in its character nor uniform in its changes. The medieval university bequeathed to its modern successor the notion of the doctorate, but the Enlightenment university presents a more familiar vision (to modern eyes) of the doctorate as a body of work contributing new knowledge. More recently, another transformation has seen the doctorate becoming (in some opinions) "a training period for future researchers, rather than a piece of work that changes the course of human knowledge" (Park 2005, 190). However,

decades separate the diffusion of the PhD around the globe, and Australian universities, for example, awarded their first doctorates 80 years after the first American PhD at Yale. As such, some changes or challenges are inconsistent in terms of when and where they appeared, and developments such as the doctorate by publication are still relatively unknown in some countries and are as yet only an emerging trend.

Postgraduate Education in the Twentieth and the Twenty-First Centuries

These considerations bring us to the suite of different pedagogies, programs, countries, and policies examined in this collection. The chapters in this handbook offer an exciting series of explorations of changing and evolving postgraduate study. Some focus on the PhD, others on professional doctorates, some on masters, and some on taught postgraduate programs. The chapters also examine the study from different angles, including student and supervisor relationships, support programs for international higher degree research students, and academic leadership, university administration, and quality benchmarking.

More specifically, the collection approaches postgraduate study from the following five perspectives:

In **Section One: University Contexts Affecting Postgraduate Education**, the focus of the contributors is on the surrounding infrastructure, resources, policies, and practices that shape postgraduate study. Chapters in Section One also examine a variety of contexts, including Australasian and African locations, and a variety of degrees, including the traditional PhD and the professional doctorates. Following the editors' opening chapter, Cheryl Crosthwaite begins at the top by examining the impact of leadership competencies on academic heads of departments who oversee postgraduate study. Like other chapters in this section, Crosthwaite introduces what developments have taken place not only within universities but also in their surrounding political and policy environments, including the emergence of managerialist practices and the demand for competence in this space. The chapter applies the Competing Values Model both to advocate for and to propose ways to achieve higher competence levels.

Diane Phillips writes with a particular focus on Australian higher education; however, the impact of neoliberalist political and economic philosophies that she delineates is a global phenomenon. As she points out, one core implication of neoliberalism has been to transform universities into a product that can be internationally marketed and exported. Within the university, work is valorized if it is auditable or can be measured via a metric. Against this backdrop, Phillips posits that a university needs its staff members to be adaptable to these new imperatives and challenges, a call that cascades down to a rethink of doctoral study.

The emergence of neoliberal priorities is next applied to the dyadic relationship between postgraduate student and supervisor in E. S. Grossman's chapter. Grossman pinpoints what could be considered a perfect storm afflicting this relationship, including the combined effects of the massification of student numbers, the increase

in academic staff workloads, the reduction in staff numbers, and more profoundly changes to what is considered the production of knowledge. Mindful of the impact of these changes, and asserting that formal university provided training for postgraduate supervisors may not be adequate or in all cases successful, Grossman proposes ways to achieve more informal staff participation in opportunities to develop supervisory relationships.

Luke van der Laan and Jenny Ostini move attention from a particular focus on neoliberalism to assessing further external intellectual and economic developments that change the world around universities and that therefore by necessity compel change in the universities. They posit that there are competing and often non-complementary discourses surrounding higher education. Universities should and must innovate and disrupt across an exceptionally wide range of economic, ecological, and social spheres, yet universities are "slow to change" and they often institutionalize the status quo (as the reactions to the PhD at the University of Sydney, mentioned earlier, exemplify). Specifically, van der Laan and Ostini suggest that universities are in the "Conceptual Age" (a progression from the "Information Age") and that they have reached a point of development recognizable as the "third generation" of postgraduate studies, both creating circumstances where robust academic leadership and future ready graduates are becoming necessities.

Marie Manidis's contribution brings into specific focus international higher degree research candidates in their first year. The first year of undergraduate study is by now an extensively researched field. The first year of international postgraduate study is explored via the author's ethnographic study and the chapter presents valuable recommendations to maximize the learning achievements of these first year students, stressing in particular the importance of participation in the available research activities. These recommendations are situated within a global context that is fostering changes to postgraduate pedagogy as well as the more localized changes unique to particular institutions and their faculties.

The themes of emergent trends and changes to practice and pedagogy are further examined in D. P. Dash's evocation of "second-career academics." Particular attention is also given to taught or coursework postgraduate study rather than the dissertation- or thesis-based outcomes considered in many other chapters. A second-career academic is not only one who joins the academy later in life and career, but also one who brings extensive professional expertise with her or him. Dash points out that the recruitment and subsequent continuing academic development of the second-career academics are simultaneously valuable and difficult. The value lies in the authentic, credible teaching in postgraduate courses that they offer, the difficulty in managing often drastic career transitions. The chapter contributes strategies for managing the challenges of this career transition while recognizing the value that the second-career academic brings to postgraduate education.

Finally for Section One, Marcus Harmes and Barbara Harmes consider the management of international students' information literacy needs. As is also demonstrated elsewhere in the collection, international students are a major import as higher education is a major export. Accordingly, it is crucial for these students' information literacy needs to be identified, fulfilled, and evaluated.

Section Two: Graduate Students and Digital Futures provides analysis of emerging digital opportunities and their intersection with postgraduate education. Claire Aitchison, Susan Carter, and Cally Guerin contribute an account of an academic blog, *DoctoralWritingSIG*. Like other contributors to this volume, they locate postgraduate study as being caught at points of tension and contradiction. Doctoral study can be an isolating process, yet there has been an efflorescence of networked online research communities that is increasingly including senior and established academics where there are exciting and emerging opportunities for connection between students and supervisors.

A key element of investigating graduate students and digital futures is understanding how diverse student, industrial, and political requirements help to frame the development of different types of doctoral programs. These program types include the Ph.D., various kinds of professional doctorates, and doctorates by publication, portfolio, and practice. In articulating these doctorate program types, Fernado F. Padro, Jonathan H. Green, and Robert Templeton link them with broader and ongoing shifts in doctoral students' demographics and aspirations.

This section includes Sue Gregory, Michelle Bannister-Tyrrell, Jennifer Charteris, and Adele Nye examining evolving trends in the provision of postgraduate students in distance and remote areas and providing their account of heutagogy, a form of self-directed learning. They present the findings of three case studies that endorse the notion of postgraduate study as taking place within complex environments in which students need capacity building to be autonomous and self-directed. These capacities are in addition to content knowledge.

Finally in this section, not all learning takes place on campus, and some by necessity takes place in restricted environments. While the number of postgraduate students who are also prison inmates is globally small, they are a cohort who confront obstacles to study and present challenges to university administrators and supervisors. Helen Farley and Anne Pike bring together their perspectives of research students working behind bars, based on their own experiences of working with incarcerated students in Australia and the United Kingdom respectively. Their chapter first provides a generalised account of the interaction between carceral priorities and efforts to study, before providing recommendations for university staff who may be unaware of the challenges of studying within prison or uncertain about how to meet these challenges.

Section Three: Pedagogy and Postgraduate Programs begins with work by Chivonne Algeo, Darrall Thompson, Elyssebeth Leigh, and Danny Carroll that bridges the sections of this handbook from digital futures to pedagogy by examining the use of software along with teaching and learning strategies. These strategies are offered against the backdrop of an exploration of a shifting dynamic between postgraduate students and their advisers or supervisors, whereby the latter's contribution is moving away from being the provider of knowledge to serving a function more akin to that of a coach and as the facilitator of a process. Their chapter contributes to the discussion of student and supervisor relationships that others in the volume offer, including Grossman. Their context is Australian, and the customization of software by the University of New South Wales's Business School, and they discuss the generally positive uptake of approaches that have reoriented

students away from an expectation that they will be "told" what they need to know and towards a greater emphasis on learning over teaching.

Many of the chapters in this collection concern students and academic staff members, while Margaret Kiley orients attention to the substantially important role of administrative staff members. In common with other chapter authors, Kiley is alert to often drastic changes in the landscape of higher degree research, including changes to entry qualifications, student demographics, and employment outcomes for graduate students. In the light of these change, Kiley proposes a range of strategies for the appropriate support of university administrative staff members to support in turn academic supervisors, especially in development programs.

Michael Cohen, Sukanto Bhattacharya, Munirul H. Nabin, and Shuddhaswatta Rafiq continue this theme of the provision of support, giving attention to taught masters coursework programs such as the Master of Business Administration (MBA) degree and the use of game theory to develop and encourage postgraduate learners. While postgraduate study may often be envisaged as the face-to-face interaction between a supervisor and a student, this chapter gives attention to learning that is possibly online, on-campus, or blended and to the management of student learning through the application of game theory, such as for the making of strategic decisions.

Michael Singh's chapter is a contribution based on his expertise in post-monolingual research methodology. The chapter develops from existing critiques of monolingual study and asserts the intellectual benefits for a range of stakeholders – students, supervisors, administrators, and managers – of developing capacity for theoretic linguistic resources and fostering diverse intellectual cultures in higher education. Singh suggests that multilingual students and the intellectual capacity for divergence in theorizing will enhance the employability of graduates as well as their intellectual creativity.

Ahmed Mansour Mohsin and Karen Trimmer also contribute to the field of linguistic and cultural diversity in their study of international postgraduate students, with a specific focus on Arabic postgraduate students. They stress the implications of several interlocking developments, in that universities are enrolling higher numbers of postgraduate students, especially from Arabic speaking backgrounds, while universities at the same time are locked into a competitive market where the demonstration of quality is essential. Noting the now common deployment of Total Quality Management (TQM), Mohsin and Trimmer urge the importance of having the means both to measure quality and to use these measures to design and improve how they support and teach international students.

Section Four: Managing Doctoral Programs opens with Ronel Erwee's study of the training of doctoral supervisors. It therefore forms a bridge into this section from earlier considerations of off-campus study, student and supervisor relationships, and supervisor training. It further builds on the concluding chapters of Section Three by evaluating the implications of cultural differences between supervisors and their students. In order to discuss the management of supervisor training, Erwee situates it holistically within a wider research training framework and contributes recommendations for managing supervisory training that are derived from a research supervision toolkit.

In the next chapter, Ronel Erwee and Chad Perry look more broadly at doctoral study in general, pinpointing what research has already established about inconsistencies, idiosyncrasies, and deficiencies in the examination of higher degree theses. For university research managers, this review usefully highlights the delays that these inconsistencies can cause, then contributes suggestions about what could become standardized procedures for examination. Like other chapters in this collection, the case study is located in a specific national context but the emergent points from the discussion can be extended to examination procedures internationally.

Chad Perry and Angèle Cavaye explore what they term a "niche" area, the professional doctorate. Their examination of the characteristics, needs, and expectations of the people undertaking this degree adduces a number of characteristics, including career-focused individuals who expect to remain outside academia and who expect their degree to contribute to their professional progression. For university managers and administrators, this chapter offers important insights into and guidelines for research paradigms, methods, and structures at the outset of study, supervision during study, and examination at its end.

Examination is the end process of higher degree study, and David Thorpe's chapter steps back several stages to the process of supervision. His focus is on the unique characteristics of supervision in Engineering. Like the other chapters in this section, though, Thorpe engages with literature on the means to achieve a high level of success in supervision and the ways to establish a constructive supervisory relationship. Thorpe highlights the particular aspects of supervision in Engineering, where the boundaries between professional and academic can be blurred as many projects require expert professional input, and where engineers also require significant management skills in order to engage with projects. Within this distinctive framework, Thorpe delineates approaches to achieve a positive supervisory relationship.

Margaret Baguley, Martin Kerby, and Georgina Barton shed light on a further specific aspect of supervision, when both the supervisor and the candidate are professional colleagues at the same university. As they note, this type of supervisory relationship has as yet attracted limited scholarly attention compared to the literature available on many other aspects of doctoral supervision. Their research reveals how the already considerable pressure on the supervisor and the candidate can increase when both are colleagues and when career progression is part of the situation. Like other chapters, recommendations are provided as well as a blueprint for ways whereby university research managers and administrators can formalize this process. Like other contributors to this section, Baguley, Kerby, and Barton provide a detailed exploration of distinctive circumstances followed by recommendations for administrators to develop and manage these circumstances.

The degree of Doctor of Business Administration (DBA) is the focus of the chapter by Michelle Wallace and Teresa Marchant. Following discussion by Thorpe of the needs of Engineering students, Wallace and Marchant overview the needs of DBA students, focusing on the degree at Australian universities. They draw on empirical research data to propose the enhanced management of the degree, including its status within the academy and its structure, and the interaction between DBA

students and the wider university. Like other chapters in this section, the scope of this chapter is valuable in encompassing degrees that are newer and less traditional than the PhD and where the degree and its students are still part of an emerging cultural shift in postgraduate education.

Simon J. Pervan and Michael A. Kortt address a current downturn in the numbers of students enrolling in the DBA and the discontinuance of the degree at some universities. Suggesting that the DBA finds itself at a crossroad for its future development or even survival, the authors draw on their long professional experience of this degree to propose a checklist for program development and a means to assess the effective administration of the DBA.

After chapters with specific foci on Engineering and Business Administration, there is a return to a wider overview of doctoral studies in the chapter by Santina Bertone and Pamela Green. They present findings from a number of submissions to the review of the Research Training Scheme (recently repackaged as the Australian Research Training Program) undertaken by the Australian Council of Learning Academies (ACOLA). They endorse the suggestions already made in the literature that "one size fits all" is not appropriate or constructive for managing doctoral study, and they then offer findings for managing diversity and thereby having cascading positive impacts on retention and completion.

Finally, in **Section Five: Postgraduate Careers** the contributors turn to life beyond the higher education degree, including in the academy and beyond. Elizabeth A. Beckmann and Abby Cathcart open this section with an exploration of Australian models for preparing doctoral candidates for careers, although they also note that the contribution to the "knowledge societies" that doctoral candidates are expected to make extend to Europe, Asia, Africa, and Latin America. By drawing on current models for best practice, Beckmann and Cathcart offer strategies that university leaders can follow in order to develop the teaching skills of current students who will be academics.

The contribution by Jane Artess and Tristram Hooley adds to the discussion of taught postgraduate programs that earlier chapters had introduced. The postgraduate taught programs (PGT), they suggest, have career development as a unifying theme of the programs. They recommend increased recognition by higher education providers of the ways that PGTs can serve as career intervention strategies.

Like the other chapters in this volume, Pam Denicolo's contribution positions postgraduate education as currently being shaped by competing and powerful developments. There are more students than ever before enrolling in postgraduate education, while there has been increasing attention given to the work preparedness of graduates. Graduates are also increasingly expected to do more than contribute to knowledge, and employability skills are now a prominent aspect of discourses around the outcomes of postgraduate study. Denicolo presents findings from studies based on the United Kingdom's Skills Agenda and the Public Engagement and Impact Agendas, while also suggesting that the awareness of the increasing emphasis on employability is variable and inconsistent.

Postgraduate study, especially writing a doctoral dissertation or thesis, can often be thought of as a solitary activity, yet the capacity to be part of teams and to lead

teams is increasingly being recognized as essential. Engaging with this point, Peter McIlveen, Harsha N. Perera, and David L. Blustein discuss the Australian Collaboratory for Career Employment & Learning for Living (ACCELL) at the University of Southern Queensland from its conceptual foundation for professional learning to the theoretical approaches usable in the education of future researchers and in developing team work capacity.

Roslyn Cameron considers the means to develop researchers who are robust and versatile. Her study of Mixed Methods Research (MMR) is presented as a way of being a "trilingual" researcher as opposed to being a researcher trained in one specific method. Using the "Group of Eight" Australian universities as the starting point for her study, Cameron argues that MMR is currently absent from postgraduate research training options, and she presents a case for its inclusion. Furthermore, the chapter offers recommendations for the implementation of training and capacity building for students and supervisors.

Finally, Fernando F. Padro explores at times the paradoxical interface between Indigenous cultural norms and values and Western professional culture that attends the enrollment of Indigenous peoples in doctoral programs. The chapter identifies several principled strategies likely to increase Indigenous doctoral student enrollment and retention.

Conclusion

As a global community, how might we approach the task of (re)designing effective, sustainable, and transformative postgraduate education as part of the broader enterprise of reimagining higher education in and for the twenty-first century? If we were able to begin afresh on this project, which assumptions, attitudes, and values would inform our work? Which relationships – between students and supervisors, between universities and communities, between public and private sectors – would be central to nurturing the crucial ingredients of genuinely excellent doctoral study and supervision?

This chapter has examined some of the contexts, debates, histories, and possible futures necessary to address these questions. In particular, the chapter has highlighted key developments in the history of the development of universities as they pertain to the growth of postgraduate education around the world. Those developments illustrate both the centuries-long genealogy of the oldest universities and the relative youthfulness of the PhD, and the even greater recency of other kinds of doctorates.

The chapter has also introduced the subsequent chapters in this handbook, clustered around five sections. The coverage that the chapter authors traverse progresses from university contexts affecting postgraduate education to the interplay between graduate students and digital futures to pedagogy and postgraduate programs to managing doctoral programs to postgraduate careers. In sum, these diverse analyses from a number of different countries and disciplines distil important understandings about the character and the possible effects of contemporary postgraduate education. In doing so, they proffer specific strategies for potential

consideration by university leaders and doctoral students and supervisors, against the backdrop of the larger project of developing and administering universities that embrace the affordances of twenty-first-century innovations while remaining true to the purposes and outcomes of higher education.

References

Åkerlind, Gerlese, and Lynn McAlpine. 2017. Supervising doctoral students: Variation in purpose and pedagogy. *Studies in Higher Education* 42: 1686–1689. https://doi.org/10.1080/03075079.2015.1118031.

Axtell, James. 2016. *Wisdom's workshop: The rise of the modern university*. Princeton: Princeton University Press.

Bettinger, Eric P., Bridget Terry Long, and Eric S. Taylor. 2016. When inputs are outputs: The case of graduate student instructors. *Economics of Education Review* 52: 63–76. https://doi.org/10.1016/j.econedurev.2016.01.005.

De Meyer, Arnoud. 2013. The future of doctoral education in business administration. *Journal of Management Development* 32 (5): 447–486. https://doi.org/10.1108/02621711311328264.

Forsyth, Hannah. 2014. *A history of the modern Australian university*. Sydney: University of New South Wales Press.

Goldberger, Marvin L., Brendan A. Maher, and Pamela Ebert Flattau. 1995. *Research doctorate programs in the United States: Continuity and change*. Washington, DC: National Academy Press.

Haskell, Thomas L. 1977. *The emergence of professional social science: The American Social Science Association and the nineteenth-century crisis of authority*. Urbana: University of Illinois Press.

Haskins, Charles Homer. 1957. *The rise of universities*. Ithaca: Cornell University Press.

Hogan, John, and Mark Clark. 1996. Postgraduate and research organization and management. In *Higher education management: The key elements*, ed. David Warner and David Palfreyman, 117–135. Buckingham: The Society for Research into Higher Education and Open University Press.

Holligan, Chris, and I. Ibrahim Sirkeci. 2011. Measuring academic research performance through audit at the expense of trust: Exploring the 21st century university. *Border Crossing: Transnational Working Papers* 1104: 45–59. Retrieved from http://www.regents.ac.uk/media/448150/1104_trust_audit_holligan_sirkeci_v2.pdf.

Hyatt, Susan Brin, Boone W. Shear, and Susan Wright, eds. 2015. *Learning under neoliberalism: Ethnographies of governance in higher education*. New York: Berghahn.

Ingleby, Ewan. 2015. The house that Jack built: Neoliberalism, teaching in higher education and the moral objections. *Teaching in Higher Education* 20: 518–529. https://doi.org/10.1080/13562517.2015.1036729.

Kamler, Barbara, and Pat Thomson. 2014. *Helping doctoral students write: Pedagogies for supervision*. 2nd ed. New York: Routledge.

Knowles, Asa Smallidge, ed. 1970. *Handbook of college and university administration*. New York: McGraw Hill.

Knowles, Asa Smallidge, ed. 1977. *The international encyclopedia of higher education*. San Francisco: Jossey-Bass Publishers.

Kohler, Robert E. 1990. The Ph.D machine: Building on the collegiate base. *Isis* 81 (4): 638–662.

Leinster-Mackay, D.P. 1978. The idea of a university: A historical perspective on some precepts and practices. *Vestes* 20 (4): 28–33.

Marshall, Stephanie. 2016. *A handbook for leaders in higher education: Transforming teaching and learning*. London: Routledge.

McNiff, Jean, ed. 2016. *Values and virtues in higher education research: Critical perspectives*. London: Routledge.
Mukerji, Siran, and Purnendu Tripathi, eds. 2017. *Handbook of research on administration, policy, and leadership in higher education*. Hershey: IGI Global.
National Research Council. 1995. *Research doctorate programs in the United States: Continuity and change*. Washington, DC: The National Academies Press. https://doi.org/10.17226/4915.
Noble, Keith Allan. 1994. *Changing doctoral degrees: An international perspective*. Buckingham: Open University Press.
Norton, Arthur O. 1909. *Readings in the history of education: Medieaval universities*. Cambridge: Harvard University Press.
O'Boyle, Lenore. 1983. Learning for its own sake: The German university as nineteenth-century model. *Comparative Studies in Society and History* 25 (1): 3–25.
Park, Chris. 2005. New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management* 27 (2): 189–207. https://doi.org/10.1080/13600800500120068.
Rashdall, Hastings. 2010 [1895]. *The universities of Europe in the Middle Ages Volume 1: Salerno, Bologna, Paris*. Cambridge Library Collection.
Shand Tucci, Douglas. 2005. *An architect's four quests: Medieval, modernist, American, ecumenical*. Amherst\Boston: University of Massachusetts Press.
Taylor, Stan, Margaret Kiley, and Robin Humphrey. 2018. *A handbook for doctoral supervisors*. 2nd ed. Abingdon: Routledge.
Verger, J. 1992. Teachers. In *A history of the university in Europe volume 1: Universities in the middle ages*, ed. Walter Ruegg, 144–168. Cambridge: Cambridge University Press.

2 Identifying the Role and Managerial Leadership Competencies of Postgraduate Heads of Departments

Cheryl Crosthwaite

Contents

Abstract

The higher education sector has seen substantial changes in the past decades fueled by technology and political imperatives. This has provided a complex context for the delivery of postgraduate education. Among these changes has been the introduction of managerialism to the higher education sector. As research better understands consumer needs for and satisfaction in postgraduate education there is a focus on the role of professional academic manager which is redefining academic leadership across

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universities including the role of the head of department. This role has been considered by numerous authors in terms of role clarity and the particular balance between teaching, research, and management. Overwhelmingly there has been a recognition for increased managerial leadership competencies for incumbents in this role. Although some universities have developed their own specific managerial leadership competency framework, this has needed dedicated resources. The Competing Values Model (CVM) offers a robust model for consideration of both roles and managerial leadership competencies within the context of the organizational culture. This model was used to identify managerial leadership competencies at six higher educational institutions, predominantly postgraduate institutions, in Kerala, India. It is proposed that this model be used as the basis for both the identification and development of managerial leadership competencies in postgraduate heads of departments.

Keywords
Head of department role · Managerialism · Managerial leadership competencies · Competing values model · Postgraduate education · Higher education institutions · Kerala universities

Introduction

The higher education sector and specifically postgraduate education are facing different demands from all its stakeholders – government, industry, and students (Mok 2003; Angell et al. 2008; Ladyshewsky and Taplin 2013; Vilkinas and Cartan 2015). Governments have responded in a number of ways to global and technological challenges, which have driven the need for a more highly trained workforce. One such way has been the growth of postgraduate education in higher education institutions (HEIs) which has as a central objective the education of: "highly skilled citizens and professionals able to address the specific issues of their national contexts as part of a wider globalised society" (Kearney 2008, p. 4). The changes in economic power, including the BRIC economies, and recognition of the need for training human capital have resulted in a large increase in demand for higher education (UNESCO, p. 9), particularly postgraduate education (Eggins 2008, p. 15).

A key asset for development of economies is the creation of high-quality human capital needed for knowledge-based economies; and postgraduate education plays an essential role in this process (Eggins, p. 15). HEIs have seen a sharp increase in numbers of graduate students and diversification of both content and delivery methods. As postgraduate education: "constitutes a particular investment – whether personal or national – in human capital" (Kearney 2008, p. 4), it is important that consideration be given to student expectations.

Postgraduate Student Expectations

The culture of higher education institutions has changed over the last decades, and it is now no longer possible to consider the customer base of HEIs in the traditional

light of previous decades (Floyd and Dimmock 2011). These challenges have also impacted on the role of postgraduate education as consumers of these services look to these qualifications to assist in their professional careers (Adams et al. 2006) and build research capabilities and for financial gain (Alam et al. 2013).

Angell et al. (2008, p. 237) argue for a customer-led rather than a product-led approach to postgraduate education so that postgraduate education providers establish a: "deeper understanding of the nature of the service that they provide." Caution though needs to be applied in not treating students as customers: "who are passively receiving service, instead of partners who are actively participating in the learning process" (Chung Sea Law 2010, p. 257).

Providers of postgraduate education need to consider the competitive nature of attracting students. In making the decision to select a HEI, students factor in evidence of service quality. According to a study by Angell et al. (2008, p. 247), student expectations include skilled and engaging faculty and regular access to teaching staff. Gardner's (2009, p. 106) study suggested a number of departmental issues which impact postgraduate students' perception of service quality including:

- Poor quality advisors
- Faculty attrition
- Departmental politics.

There are also reported concerns over the attrition rate of postgraduate students (Gardner 2009; Linden et al. 2013; Brill et al. 2014). The head of department (HoD) role is of significant relevance in contributing to the quality of postgraduate education as well as the student experience and hence retention of students. In addition to the need to consider the student experience, another key change which has dominated the contemporary academic management environment (Davis 2017) is that of managerialism.

Managerialism

Managerialism is defined as the process of adoption of private sector management tools within public sector organizations (Brunetto 2001). Managerialism, enforced by government and university funding bodies (Deem 2004; Winter 2009), is a key force impacting on the way HEIs are now operating (Erwee et al. 2002; Meyer 2002; Nickson 2014; Rindfleish 2003). Managerialism in HEIs has been well documented (Deem 2004; Erwee et al. 2002; Meyer 2002; Teelkan 2012; Davis 2017) with complex historical, political, and social antecedents accounting for managerialism in different parts of the world (Rindfleish 2003). Managerialism has had a profound impact on western HEIs over the past decade (Nickson 2014; Santiago et al. 2006) with a developing tension between traditional forms of governance [collegiality] and new forms of governance [corporatism] (Crebert 2000; Mercer 2009; Mok 2003; Preston and Price 2012).

Preston and Price (2012, p. 410) contend that: "practices of managerialism often sit uncomfortably amidst the more traditional values of academia." While there is an argument that managerialism in: "the right proportion and in the right context" may be useful in universities (Teelken 2012, p. 272), others suggest that it has eroded collegiality and altered the institutional culture (Weinberg and Graham-Smith 2012; Davis 2017).

As the public sector: "hallmarks of cost-effectiveness and doing more with less were transferred into the higher education sector" (Crebert 2000, p. 73) in Australia, a significant impact has been felt on the academic culture, planning and administration, measurement of output and productivity, and accountability (Winter and Sarros 2002).

Among many other influences, managerialism has thus contributed to a process of converting professionals to managers (Brunetto 2001). Heads of department have not escaped this process, and there is now an expectation that HoDs will demonstrate a wide range of management and leadership skills (Stratford 2012) in carrying out their role.

In consideration, then, of the issues of managerialism, the wider external trends of technology and the increase in student demand and expectations, there are serious challenges facing leadership in HEIs including:

- Renewing/upskilling faculty over the next decade
- Creating a culture of innovation
- Developing international strategies to strengthen national knowledge bases (UNESCO, p. 9).

Clearly these issues impact all levels of leadership; however, the role of the head of department is a vital part of postgraduate education leadership at HEIs. The role and identified managerial leadership competencies needed to address these challenges will be explored in this chapter with particular reference to research conducted in Kerala, India, considering 36 heads of department across six varied HEIs offering postgraduate education (Crosthwaite 2010).

Role of Heads of Department

Bryman (2007, p. 694) suggests that the department is a crucial unit of analysis in HEIs and that it is: "the chief springboard for the organisation's main teaching and research activities". The role of the HoD (Bryman 2007; Hancock and Hellawell 2003) has been described as having distinctive challenges: "trying to juggle teaching, research and administration" (Mercer 2009, p. 350) as well as tension in dealing with both senior management and academics and the impact of managerialism (Santiago et al. 2006). Heads of departments in higher educational institutions play a pivotal role in building the organization's culture (Edgar and Geare 2010), providing academic leadership, and ethically managing their departments (Crosthwaite and Erwee 2014; Erwee et al. 2002; Temple and Ylitalo 2009).

Deem's (2004) study identified difficulties with the HoD role including increasing student numbers, managing the dual demands of teaching and research, high workloads for HoDs and their staff, dealing with difficult people, a general shortage of resources, and budget issues. The HoD role has been described as one of managing conflicts and tensions and balancing conflicting demands (Henkel 2000). In doing so the HoD has to balance: "between change (vision and inspiration) and stability (planning and control) walking... a fine line, seeking both constructive debate, and consensus" (Kallenberg 2007, p. 24). According to Henkel (2000), these conflicting demands fall into three categories:

- Academic versus administrative work
- Dealing with external demands and crises versus acting strategically
- Developing individuals versus managing change in the department.

What perhaps is most concerning is that the role of the HoD has changed not because there has been any deliberate consideration and review of the role, rather because of the challenges being faced by HEIs (Jackson 1999; Qualter and Willis 2012).

Lack of Role Clarity

The lack of role clarity of the HoD has been noted by a number of researchers (Crosthwaite and Erwee 2014; Preston and Price 2012). The absence of position descriptions for all 36 HoDs in 6 HEIs in Kerala, India, was identified by Crosthwaite (2010) as a factor in the HoDs' lack of role clarity and is consistent with both Henkel (2000) and Thompson and Harrison (2002) in identifying a lack of understanding of the role of the HoD.

Santiago et al.'s (2006, p. 243) study in Portuguese universities suggested that HoDs suffered from various degrees of: "ambiguity, contradiction and conflictedness." Henkel (2000, p. 249) summarized the position of academic managers as having a "wide range of meanings for individuals, depending upon their own existing academic identities and their institutional environment." Thompson and Harrison (2002) found there was no clear understanding or consensus between HoDs, deans, and staff on the role of the HoD.

To provide some clarity, Hancock and Hellawell (2003) suggest that the HoD's role could be described as that of an academic middle manager. Kallenberg (2007, p. 22) argues that an academic middle manager has to manage several positions, processes, and interests and:

- is the linking pin between 'top-down' and 'bottom-up' processes, and
- has to find a balance between the teaching staff and the administrators, between education and research, and finally, between hierarchy and collegiality.

Indeed, Nguyen (2012) suggests that the role needs to develop into one of a professional academic manager. Further there is a recognized need for the HoD to

support the senior managers in the HEI (Preston and Price 2012) in implementing the identified changes that are needed as the organization seeks to identify and implement strategies to meet the current challenges facing the higher education sector.

Taken in the light of requirements for postgraduate education identified by the UNESCO forum (2008, p. 9) and transformations required for effective leadership in HEIs (Gayle et al. 2011) (both outlined in Table 1), then both the role of the HoD and relevant managerial leadership competencies require further investigation and strengthening.

Selection of HoD

The selection process of the HoDs has come under scrutiny. Wolverton et al. (2005) maintain that HEIs exhibit faulty reasoning in selecting HoDs – assuming that being a good faculty member will make the person at least adequate in a managerial leadership role.

While Jackson (1999) reports on election to the position in some universities and a managerial decision in others, Preston and Price (2012) point out selection processes ranging from pressure to step up as no one else wanted to (it being "my turn") to being asked back from sabbatical early to take on the role. The motivation to serve in a leadership HoD role at HEIs, with no or little extrinsic rewards, may diminish or not be present at all (Hoppe 2003). Indeed, the "reluctant manager" syndrome with HoDs is well documented (Preston and Price 2012). This is in stark contrast to appointments in the corporate sector which are focused on merit. This suggests key issues with motivation and the performance of the role (Crosthwaite and Erwee 2014).

Table 1 Identified global challenges and institutional transformations needed for leadership in postgraduate education (Adapted from UNESCO, p. 9 and Gayle et al. (2011), pp. 19–20)

Global challenges	Institutional transformation
Accelerated collaboration and reaffirming collegiality	Collaborating with peer institutions
Attraction of talent	Create a culture of celebration
Building knowledge banks	Encourage faculty to participate in regional and national professional networks
Enhancement of research collaboration via postgraduate education	Generating support from external stakeholders
Long-term investment in knowledge capital	Linking espoused values of HEI to organizational changes
Orientation to global problem-solving	Maintaining open channels of communication
Strategic bilateral partnerships	Use the strategic plan to clarify HEI vision and mission
Targeted academic mobility	

Lack of Managerial and Leadership Competencies (MLCs)

The literature suggests that there is little managerial leadership development to prepare HoDs and other university administrators (Morris and Laipple 2015). Spendlove (2007) contends that the HEIs in his study had little or no organizational strategy for either identifying or developing leadership skills. Insufficiently prepared HoDs can impact on both department and overall effectiveness and may contribute to poor leadership (Potgieter and Coetzee 2010).

Bolton (2000) suggests that as academics move into HoD of department roles, there is a need to develop different skills sets, values, and knowledge. Thompson and Harrison's (2002) single case study at a UK university identified MLCs needed by HoDs as:

- Managing resources
- Managing information
- Controlling costs and enhancing value
- Managing people
- Managing yourself
- Managing personal emotions and stress.

Stratford (2012) suggested a number of recommendations to improve the role concluding that it be professionalized and that the HoD is better supported. This emphasis on the role of the HoD has led to a renewed interest in the managerial leadership competencies that HoDs need to develop in order to successfully carry out their role (Potgieter and Coetzee 2010).

Managerial Leadership Competencies

From the research discussed above, it appears that there is substantial evidence pointing to the need for HoDs to develop and demonstrate MLCs in order to positively impact on the faculty, department, and more broadly on the provision of postgraduate education. A study conducted by Potgieter and Coetzee (2010) in South Africa demonstrated the practical importance of utilizing management competency frameworks for the identification of training needs of HoDs in the higher education environment. They concluded that every HEI needs to identify the competencies they deem necessary for their HoD development. While authors such as Erwee et al. (2002) and Potgieter and Coetzee (2010) have identified individual frameworks for their respective university, this has required significant resources, and thus it is not always feasible for a specific managerial leadership competency framework to be developed.

The Management Leadership Debate

The lack of a clear definition of leadership compounds the debate between leadership and management, and this has become a point of contention in the management field

(English 2005). The argument can perhaps best be summarized as a continuum with innovation and change at one end and stability and order at the other (Yukl and Lepsinger 2005). Yukl and Lepsinger (2005) contend that scholars who have defined the two roles in a narrow way are not necessarily reflecting adequately the literature on management and leadership. They argue that this has resulted in the continuation of the management versus leadership controversy, and they suggest a consideration of this issue in three ways:

(a) The first way is to consider the two as co-equal roles, with each being more broadly defined in the literature.
(b) The second approach is to retain a relatively narrow definition of leadership and include this as part of management. DuBrin and Dalglish (2003) proposed a similar argument, stressing both are necessary, but leadership is more so, for an organization's success.
(c) The final approach is to identify roles without classifying them as either management or leadership as per the flexible leadership model which considers three key determinants:
    - Efficiency and process reliability
    - Innovation and adaptation
    - Human resources and relations (Yukl and Lepsinger 2005).

Managerial Leadership Competencies Defined

The use of the concept of managerial leadership proposed by Quinn et al. (2003) provides a way forward in the debate about the relationship between management and leadership. It echoes that of Yukl and Lepsinger's (2005) third approach, and integrates both management and leadership behaviors (Osseo-Asare et al. 2007), both transformational and transactional, so that the range of competencies required for a manager to function in an organization is acknowledged (Quinn et al. 2003). Darling and Nurmi (2009, p. 206) reviewed the literature in relation to the issue of management and leadership and concluded that: "most truly successful individuals in key directive roles in organisations develop a capability to perform both sets of functional responsibilities well." This is echoed in Osseo-Asare et al.'s (2007) position where managerial leaders are expected to be effective leaders in deciding the right teaching and research quality improvement objectives and, second, be efficient managers in the way resources are utilized to achieve predetermined objectives.

Quinn et al. (2003) provide an integrated approach to an understanding of the roles and competencies needed by managers and leaders in using the term managerial leader. Thus the term being used to reflect the area of management and leadership will be managerial leadership. The definition of managerial leadership is adapted from Quinn et al. (2003) and Hellriegal et al. (2005) to mean:

> the ability to integrate opposite and complex roles in order to manage human relation functions, organise, adapt and be productive, in pursuit of the organisation's goals.

Stuart and Lindsay (1997, p. 28), after considering the literature, propose a definition of competencies as:

> integrated sets of behaviours which can be directed towards successful goal achievement within competence domains.

Barber and Tietje (2004, p. 506), in their study, considered the identification of competencies for the purpose of training and development and defined MLCs as:

> a cluster of related knowledge, skills, and attitudes that affects a major part of one's job (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development.

Hence a definition of managerial leadership competencies, which incorporates a level of commonality, can be adapted from Stuart and Lindsay (1997) and Barber and Tietje (2004) to be:

> MLCs are integrated sets of manager behaviours and attributes which can be directed towards successful goal achievement within competence domains in one's job, to agreed work standards, and that can be improved via training and development.

The next section will explore the identification of managerial leadership competencies through the Competing Values Model and consider how the use of these MLCs may positively impact the capacity of the HoD to work in the complex environment of postgraduate education.

Managerial Leadership Competencies Model

Quinn et al. (2003) have developed a Competing Values Model (CVM) which details eight roles with three competencies each (a total of 24 competencies) that are needed for successful managerial leadership. The CVM has a number of strengths in relation to consideration of MLCs. Firstly, the framework recognizes and integrates four key models of management (Rational Goal Model, Internal Process Model, Human Relations Model, and the Open Systems Model) from the Competing Values Framework of Cameron and Quinn (2006); which is recognized as one of the most influential and extensively used models in the field (Yu andWu 2009). The four models and different organizational culture orientations are depicted in Fig. 1.

The inclusion of the four models within the one Competing Values Model provides a degree of complexity and variety to the model which more correctly reflects the complex environment in which managers act in today's environment (Quinn et al. 2003). Further, the model demonstrates the tensions existing within organizations (i.e., between flexibility and control and between internal processes and external positioning), thus offering the opportunity to move from an "either or position" to a more inclusive approach in describing organizational culture and also the roles and MLCs needed (Quinn 1988).

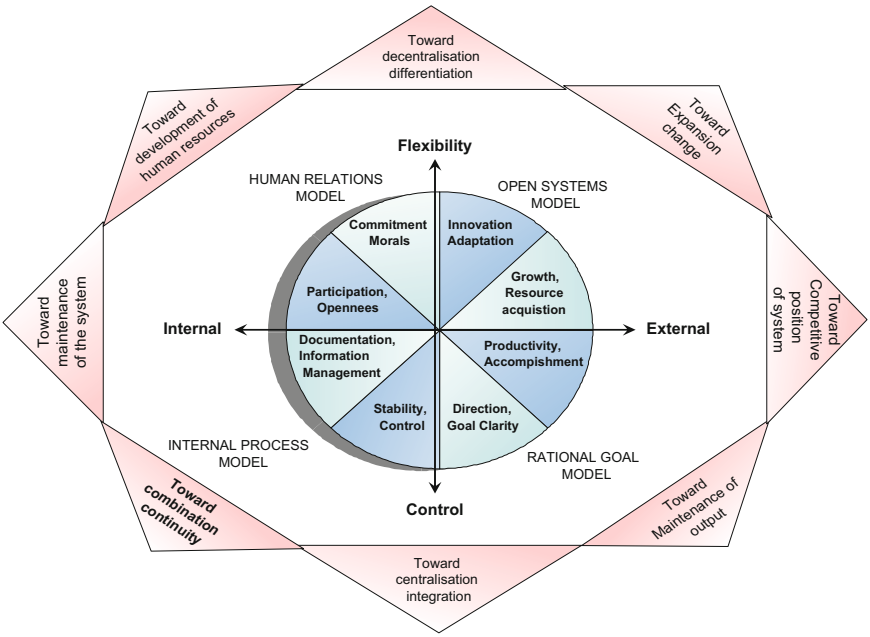

Fig. 1 Quinn et al's (2015) CVM and organizational orientation Source: Adapted from Quinn et al. (2015, p. 14)

In accepting that organizations are complex adaptive systems, then the CVM also reflects the opposing nature of the models which characterizes the position of organizations in the "real world'"(Quinn et al. 2003). Thus, for HoDs to be successful or competent in their role, they need to demonstrate behavioral complexity (Hayes et al. 2000), that is, the capacity to demonstrate MLCs from each of the different models. Lastly, the model's defined MLCs were determined through an expert panel process, which finally determined the identified 24 competencies from a range of over 250. The roles and models are depicted in Fig. 2.

The authors of the CVM argue that the identified competencies are highly consistent with the existing literature on MLCs, quoting publications ranging from the years 1963 to 2000 (Quinn et al. 2003). In an independent review of the literature, Crosthwaite (2010) identified 19 authors who had published in the field of MLCs between 2000 and 2010 with a particular focus on HEIs. This process brings additional rigor to the model as each item was triangulated from a variety of sources from both educational and noneducational settings, as well as both public and private sector studies.

As can be seen from Table 2, all 24 competencies of the CVM meet the criteria established by Hammons and Murry (1996) of being correlated with a minimum of five different studies. It is important to note that as each author may use different terms in defining each of the competencies, it was a matter of judgment, by the researcher (Thomas and Sireno 1980) as to where the cited competencies were placed against the corresponding MLCs of the CVM.

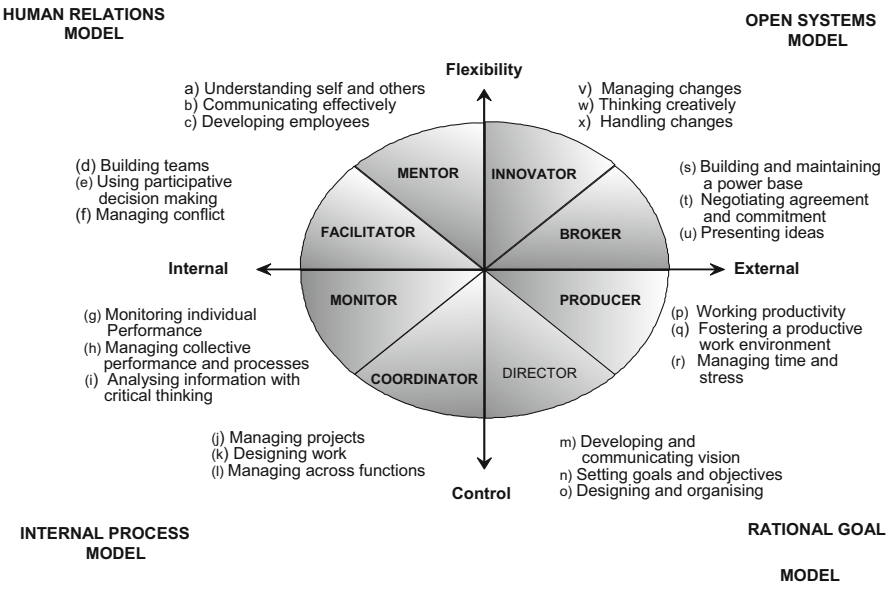

Fig. 2 CVM: incorporating the CVF with associated roles and MLCs (Source Quinn et al. 2003, p. 16)

The CVM and MLCS Applied to HoDs in HEIs in Kerala, India

The 24 competencies discussed above were used in a study to identify the required MLCs of heads of department at six HEIs in the state of Kerala, India. Thirty-six HoDs were interviewed across the six HEIs, all of which offered postgraduate education, and asked to identify if the 24 MLCs were important to their role and, if so, in what priority order.

The interviewed HoDs as a group identified all the MLCs from Quinn et al.'s (2003) model as having relevance to their work function. The cross-case analysis identified 11 MLCs (cluster 1) for the role of the HoD that have agreement across all six cases, with a rating of important or higher. A further nine MLCs (cluster 2) were rated on average as important or higher by respondents from five of the six cases and three MLCs (cluster 3) rated as important or higher by respondents in four cases. These competencies are displayed in Table 3. Thus the vast majority (96%) of MLCs were selected by respondents from the majority of cases as important or higher.

The results from this study suggest a general agreement by the interviewed HoDs in all six cases that 23 MLCs are considered as important or higher (with one competency, managing across functions, identified as somewhat important). Table 4 presents the priority order.

The findings are supportive of the 24 MLCs contained within the CVM, which have been validated by previous studies (Quinn et al. 2003) and, also, validated

Table 2 Summary of cited competencies matched to role and competency of the CVM (Source: Crosthwaite 2010)

ML role	Competency	Identified authors
Mentor (Ca)	Understanding self and others	Agut et al. (2003), Abraham (2001), Bartram (2005), Bennis (1991), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Meyer (2002), Scholtes (1999), Sherman et al. (2001), and Spendlove (2007)
(Cb)	Communicating effectively	Agut et al. (2003), Abraham (2001), Bartrum (2005), Bennis (1991), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), Rausch et al. (2002), Spendlove (2007), and Townsend (1997)
(Cc)	Developing employees	Bartram (2005), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), New (1996), Rausch et al. (2002), Sherman et al. (2001), Spendlove (2007), Terrion (2006), Townsend (1997), and Yukl and Lepsinger (2005)
Facilitator (Cd)	Building teams	Abraham et al. (2001), Bartrum (2005), Duncan and Harlacher (1991), Erwee et al. (2002), May (1999), Meyer (2002), New (1996, Spendlove (2007), Terrion (2006), and Yukl and Lepsinger (2005)
(Ce)	Using participative decision making	Agut et al. (2003), Bartram (2005), Erwee et al. (2002), Matheson (2001), May (1999), Meyer (2002), Rausch et al. (2002), Terrion (2006), Townsend (1997), and Yukl and Lepsinger (2005)
(Cf)	Managing conflict	Agut et al. (2003), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Rausch et al. (2002), and Terrion (2006)
Monitor (Cg)	Monitoring individual performance	Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), May (1999), New (1996, Rausch et al. (2002), Sherman et al. (2001), Terrion (2006), Townsend (1997), and Yukl and Lepsinger (2005)
(Ch)	Managing collective performance and processes	Agut et al. (2003), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), May (1999), Meyer (2002), New (1996, Rausch et al. (2002), Scholtes (1999), Sherman et al. (2001), and Townsend (1997)
(Ci)	Analyzing information with critical thinking	Abraham et al. (2001), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), May (1999), New (1996, and Townsend (1997)
Coordinator (Cj)	Managing projects	Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Meyer (2002), Scholtes (1999), Terrion (2006), and Townsend (1997)
(Ck)	Designing work	Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), New (1996, Rausch et al. (2002), and Meyer (2002)

(*continued*)

Table 2 (continued)

ML role	Competency	Identified authors
(Cl)	Managing across functions	Erwee et al. (2002); Hammons and Keller (1990), May (1999), New (1996, Rausch et al. (2002), Scholtes (1999), and Terrion (2006)
Director (Cm)	Developing and communicating a vision	Agut et al. (2003), Bartram (2005), Bennis (1991), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Kanji (2001), Matheson (2001), Rausch et al. (2002), Scholtes (1999), and Yukl and Lepsinger (2005)
(Cn)	Setting goals and objectives	Abraham et al. (2001), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Kanji (2001), Matheson (2001), Meyer (2002), New (1996, Rausch et al. (2002), Spendlove (2007), Townsend (1997), Terrion (2006), and Yukl and Lepsinger (2005)
(Co)	Designing and organizing	Bartram (2005), Erwee et al. (2002), Matheson (2001), New (1996, Rausch et al. (2002), and Scholtes (1999)
Producer (Cp)	Working productively	Bartram (2005), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), and Spendlove (2007)
(Cq)	Fostering a productive work environment	Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Kanji (2001), New (1996), Rausch et al. (2002), and Yukl and Lepsinger (2005)
(Cr)	Managing time and stress	Agut et al. (2003), Bartram (2005), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), May (1999), Spendlove (2007), and Townsend (1997)
Broker (Cs)	Building and maintaining a power base	Bartram (2005), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), Rausch et al. (2002), and Sherman et al. (2001)
(Ct)	Negotiating agreement and commitment	Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), May (1999), Meyer (2002), New (1996, and Spendlove (2007)
(Cu)	Presenting ideas	Agut et al. (2003), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2000), May (1999), New (1996,and Terrion (2006)
Innovator (Cv)	Living with change	Agut et al. (2003), Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), New (1996, Sherman et al. (2001), and Terrion (2006)
(Cw)	Thinking creatively	Bartram (2005), Duncan and Harlacher (1991), Erwee et al. (2002), Hammons and Keller (1990), May (1999), and New (1996
(Cx)	Managing change	Bartram (2005), Erwee et al. (2002), Hammons and Keller (1990), Matheson (2001), May (1999), Meyer (2002), New (1996, Sherman et al. (2001), Spendlove (2007), Terrion (2006), and Yukl and Lepsinger (2005)

Table 3 Selected MLCs by cluster (Source: Crosthwaite 2010)

Cluster 1	Cluster 2	Cluster 3
Ca) Understanding self and others	Ce) Using participative decision making	Cd) Building teams
		Ci) Analyzing information with critical thinking
Cb) Communicating effectively	Ch) Managing collective performance and processes	Ct) Negotiating agreement and commitment
Cc) Developing employees	Cj) Managing projects	
Cf) Managing conflict	Ck) Designing work	
Cg) Monitoring individual performance	Co) Designing and organizing	
	Cp) Working productively	
	Cr) Managing time and stress	
Cm) Developing and communicating a vision	Cx) Handling change	
Cn) Setting goals and objectives		
Cq) Fostering a productive work environment		
Cu) Presenting ideas		
Cv) Managing change		
Cw) Thinking creatively		

in this study, by comparison to 19 other authors (Table 2). The selection of these MLCs is supportive of a number of other studies (Henkel 2000; Thompson and Harrison 2002).

Competencies and Their Associated Roles

All the MLCs in the CVM were selected by respondents indicating that all corresponding roles do have a place in the HoD function; however, there were six roles which were most prevalent. The two roles that were least favored were broker and coordinator. The six roles are presented in Table 5.

This is suggestive that the HoD role, in Kerala HEIs, is a complex and conflicting one (Quinn et al. 2003) requiring the ability to adjust flexibly across a number of roles depending on the organizational context.

Another aspect of the study (Crosthwaite 2010) asked HoDs to identify their organizational culture using an instrument developed from the CVF (Quinn and Spreitzer 1991) designed to measure perceptions of the organizational environment. In order to better understand the relationship between organizational culture and the HoD role, it is helpful to contrast these roles to the relevant organizational culture suggested by the CVM. The *director* and *producer* roles are consistent with the prevalent organizational culture across the cases (that of rational culture). The *innovator* role is also consistent with the development culture described by respondents. The *monitor* role is related to the hierarchal (internal process) culture. The *mentor* and

Table 4 All case analysis of CVM competencies by HoDs by ranking and role (Source: Crosthwaite 2010)

Rank	Competency	Associated role
1	Understanding self and others	Mentor
2	Developing and communicating a vision	Director
2	Communicating effectively	Mentor
2	Thinking creatively	Innovator
5	Setting goals and objectives	Director
6	Using participative decision making	Facilitator
7	Monitoring individual performance	Monitor
7	Working productively	Producer
7	Managing collective performance and processes	Monitor
7	Fostering a productive work environment	Producer
11	Presenting ideas	Broker
11	Managing change	Innovator
11	Developing employees	Mentor
11	Handling change	Innovator
15	Managing conflict	Facilitator
15	Analyzing information with critical thinking	Monitor
15	Designing and organizing	Director
15	Managing time and stress	Producer
15	Building teams	Facilitator
15	Managing projects	Coordinator
21	Negotiating agreement and commitment	Broker
22	Designing work	Coordinator
23	Managing across functions	Coordinator
24	Building and maintaining a power base	Broker

facilitator roles correspond with group (human relations) culture, rated by respondents across all cases as the least dominant organizational culture. Thus there is an apparent disconnect between the type of MLCs selected and the associated roles with the description of some of the organizational cultures present in the six cases.

The CVM suggests that a tension exists between the competing values within an organization which is also reflected within HoDs (Quinn 1988). The findings from this study support this position. While a cursory glance at the model would suggest that the dominant culture identified by respondents for the case organization is reflective of similar roles and thus MLCs, the results present a much more complex picture. This complexity does not however contradict the CVM; rather, the CVM can be seen as a way of understanding the complex nature of the organization and the competing values or tensions (Quinn and Spreitzer 1997). The CVM has been useful in determining both MLCs and roles that HoDs feel are important to carrying out their work function effectively. The 24 MLCs as described in the CVM have been shown to have a strong relationship to those identified by HoDs. The relationship postulated by the CVM to the roles, MLCs, and related cultures and models have

Table 5 The dominant roles identified for the HoD (Source: Crosthwaite 2010)

Role	Description of what managers are expected to do
Mentor	Be engaged in the development of people through a caring empathetic orientation; be helpful, considerate, approachable, open, and fair; listen and support legitimate requests, convey appreciation, and give both compliments and credit
Director	Clarify expectations through processes, such as planning and goal setting; be a decisive initiator who defines problems, selects alternatives, establishes objectives, define roles, generates rules, and gives instructions
Innovator	Facilitate adaptation and change; pay attention to the changing environment and identify important trends; conceptualize and project manage necessary changes; tolerate uncertainty and risk
Facilitator	Foster collective effort, build cohesion and teamwork, and manage interpersonal conflict; be process orientated; intervene in interpersonal disputes; use conflict reduction techniques; develop cohesion and morale; encourage input and participation and facilitate group problem-solving
Monitor	Be aware of what is happening in the department; determine if rules are being complied with; monitor departmental output; review and respond to routine information and author reports and other documents
Producer	Be task orientated and work focused; display high interest, motivation, energy, and personal drive; accept responsibility and be highly productive

indicated a clear tension, or competing values, between the dominant cultures in the organization and HoDs' perception of roles and MLCs.

Having discussed the value of identifying the MLCs required for HoDs to be successful in their role, the next section addresses the need for the development of these competencies in HoDs.

Development of HoDs' Managerial Competencies

The body of research that has looked at the role of the HoD presents a strong case for a changed approach to the selection and development of incumbents. Among the recommendations has been the need for a clear position description, appropriate selection, established orientation, and a development program.

Although a number of issues have been discussed that will enhance the ability to carry out the role of the HoDs, this chapter has focused largely on the need for managerial leadership competencies to be both identified and developed.

Morris and Laipple (2015, p. 242) suggest that there is a false expectation that HoDs will be: "successful in handling the business as well as the people management/development that comes along with these administrative roles without proper mentoring, support, and training." Managerial leadership development (MLD) assists in increasing productivity and creating organizational change (Terrion 2006). The most prevalent approach to MLD in recent years has been the competency movement (Zenger and Folkman 2003). MLCs provide a useful, measurable tool to use in guiding and assessing MLD (Spendlove 2007). A competency-based approach to the training and development of HoDs has been advocated (Poiteger and Coetzee 2010).

Turning to MLD in the higher education sector (HES), Temple and Ylitalo (2009) maintain that systematic training for managerial leadership in the HES is rare. This is supportive of earlier work of Henkel (2000) whose study of academic identity in 11 UK universities identified that HoDs had no systematic training in the role of becoming an academic manager. Though the HoD position is regarded as key in HEIs, little or no formal training for the job was given to incumbents (Thompson and Harrison 2002).

However, Terrion (2006) points out there is now a much greater push for an emphasis on MLD in HEIs and the development needs of leaders in the academic field. Terrion (2006) reviewed the effectiveness of a 13-module leadership training program at a Canadian university and found that this program had a positive impact on the development and reinforcement of leadership skills. Spendlove (2007) supports a competency-based approach to the training and development of HoDs.

Only three per cent of over 2000 academic leaders surveyed in US national studies from 1990 to 2000 had leadership development programs at their universities (Gmelch 2004). Nguyen (2012) reports on some initiatives in the USA, the American Council on Education; in the UK, the Leadership Foundation for Higher Education; and in Australia, the LH Martin Institute for Higher Education Leadership and Management. All of these demonstrate the emphasis being placed on the development of managerial leadership skills for middle-level academic managers in postgraduate education.

The strength of the CVM model with its relationship between organizational culture, identification of roles, and delineation of 24 managerial leadership competencies offers a robust way forward in constructing a training framework for HoDs to equip them in their leadership managerial role.

Conclusion

Higher educational institutions have complex organizational structures, highly bureaucratic processes, and strong subcultures that can influence heads of departments. Changes to the environment in which HEIs are offering postgraduate education are resulting in the need for HEIs to consider the impact on HEI leadership and management at all levels, including that of department head (Floyd and Dimmock 2011).

To assist HEIs to deal with the complex environments they face in the delivery of postgraduate education, managerial leadership needs to occur at all levels in the organization. The role of the HoDs as a mid-level academic manager has been the focus of many researchers who argue for greater job clarity and a clear identification of managerial leadership competencies.

If, as suggested, HoDs are central to the decisions being made and the implementation of strategic change initiatives, then clearly a greater focus on understanding the role they play, a specific position description, clear selection criteria, support, and management and leadership development needs to take place.

A key focus supported by numerous authors remains the development of managerial leadership competencies. While some authors have reported on individual management and leadership competency frameworks being developed with in individual universities, Crosthwaite and Erwee (2014) focused attention on a robust model that has empirical support in the higher education sector. This model can be usefully applied to HEIs as in the author's study of six HEIs in the state of Kerala, India. As such the Competing Values Model provides a significant step forward in the identification and development of managerial leadership competencies in the provision of postgraduate education in higher education institutions.

References

Abraham, S. E., L. A. Karns, K. Shaw, and M. A. Mena. 2001. Managerial competencies and the managerial performance appraisal process. *Journal of Management Development* 20(10): 842–852.

Adams, K., A. Zander, and G. Mullins. 2006. The professional expectations and experiences of Australian postgraduate research students in Engineering fields. Proceedings of the EDU-COM 2006 International Conference. Engagement and empowerment: New opportunities for growth in higher education, Edith Cowan University, Perth, 22–24 Nov 2006.

Alam, F., Q. Alam, and G.R. Rasul. 2013. A pilot study on post graduate supervision. *Procedia Engineering* 56: 875–881.

Angell, R.J., T.W. Heffernan, and P. Megicks. 2008. Service quality in postgraduate education. *Quality Assurance in Education* 16 (3): 236–254.

Agut, R., S. Grau, and J. Peiró. 2003. Individual and contextual influences on managerial competency needs. *The Journal of Management Development* 22(10): 906–918.

Barber, C.S., and B.C. Tietje. 2004. Competency requirements for managerial development in manufacturing, assembly, and/or material processing functions. *Journal of Management Development* 23 (6): 596–607.

Bartram, D. 2005. The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology* 90(6): 1185–1203.

Bennis, W. 1991. Learning some basic truisms about leadership. *National Forum* 71(1): 12–15.

Bolton, A. 2000. *Managing the academic init*. Milton Keynes: Society for Research in Higher Education and Open University Press.

Brill, J.L., K.K. Balcanoff, D. Land, M.M. Gogarty, and F. Turner. 2014. Best practices in doctoral retention: Mentoring. *Higher Learning Research Communications* 4 (2): 26–37. http://dx.doi.org/10.18870/hlrc.v2i2.66.

Brunetto, Y. 2001. Mediating change for public-sector professionals. *International Journal of Public Sector Management* 14 (6): 465–481.

Bryman, A. 2007. *Effective leadership in higher education: Summary of findings*, Research and development series. London: Leadership Foundation for Higher Education.

Cameron, K., and R.E. Quinn. 2006. *Diagnosing and changing organizational culture: Based on the competing values framework*. Beijing: China Renmin University Press.

Chung Sea Law, D. 2010. Quality assurance in post-secondary education: The student experience. *Quality Assurance in Education* 18 (4): 250–270. https://doi.org/10.1108/09684881011079125.

Crebert, G. 2000. Links between the purpose and outcomes of planning: Perceptions of heads of school at Griffith university. *Journal of Higher Education Policy and Management* 22 (1): 73–85.

Crosthwaite, C. 2010. Managerial leadership competencies of Heads of Departments: A case study of higher educational institutions in Kerala, India. Unpublished doctorate. University of Southern Queensland, Queensland.

Crosthwaite, C., and R. Erwee. 2014. Managerial leadership competencies of Heads of Department in higher education institutions in Kerala, India. In *4th International conference on Engaged Management Scholarship in Tulsa*. http://ssrn.com/abstract=2554024.

Darling, J., and R. Nurmi. 2009. Key contemporary paradigms of management and leadership: A linguistic exploration and case for managerial leadership. *European Business Review* 21 (3): 201–214.

Davis, A. 2017. Managerialism and the risky business of quality assurance in universities. *Quality Assurance in Education* 25 (3): 317–328. https://doi.org/10.1108/QAE-06-2016-0027.

Deem, R. 2004. The knowledge worker, the manager-academic and the contemporary UK university: New and old forms of public management? *Financial Accountability and Management* 20 (2): 107–128.

DuBrin, A., and C. Dalglish. 2003. *Leadership: An Australasian focus*. Milton Keynes: Wiley.

Duncan, A., and E. Harlacher. 1991. The twenty first century executive leader. *Community College Review* 18(4): 3948.

Edgar, F., and A. Geare. 2010. Characteristics of high- and low-performing University Departments as assessed by the New Zealand Performance Based Research Funding (PBRF) exercise. *Australian Accounting Review* 20 (1): 55–63.

Eggins, H. 2008. Trends and issues in postgraduate education: A global review. In *Trends and issues in UNESCO postgraduate education: Challenges for research International Experts' Workshop*. Final Report. http://unesdoc.unesco.org/images/0016/001607/160744e.pdf. Accessed on 8 August 2017

English, F.W. 2005. A metadiscursive perspective on the landscape of educational leadership in the 21st Century. In *The Sage handbook of educational leadership*, ed. F.W. English, ix–xvi. Thousand Oaks: Sage.

Erwee, R, L. Willcoxson, D. Smith, and C. Pederson. 2002. Constructing a leadership competencies development tool: A case study in a university. Paper presented to 16th Annual ANZAM Conference, Beechworth, 6 Dec.

Floyd, A., and C. Dimmock. 2011. 'Jugglers', 'copers' and 'strugglers': Academics' perceptions of being a head of department in a post-1992 UK university and how it influences their future careers. *Journal of Higher Education Policy and Management* 33 (4): 387–399.

Gardner, S.K. 2009. Student and faculty attributions of attrition in high and low-completing doctoral programs in the United States. *High Education* 58: 97–112. https://doi.org/10.1007/s10734-008-9184-7.

Gayle, D.J., B. Tewarie, and A.Q. White. 2011. *Governance in the twenty-first-century University: Approaches to effective leadership and strategic management: ASHE-ERIC Higher Education Report*. New York: Wiley.

Gmelch, W. H. 2004.The department chair's balancing acts. *New Directions for Higher Education* 126: 69–84.

Hammons, J., and L. Keller. 1990. Competencies and personal characteristics of future community college presidents. *Community College Review* 18(3): 34–41.

Hammons, J.O., and J.W. Murry Jr. 1996. Management appraisal systems in community colleges: How good are they? *Community College Review* 24 (1): 19. https://doi.org/10.1177/009155219602400103.

Hancock, N., and D. Hellawell. 2003. Academic middle management in higher education: A game of hide and seek? *Journal of Higher Education Policy and Management* 25 (1): 5–12.

Hayes, J., A. Rose-Quirie, and C. Allinson. 2000. Senior managers' perceptions of the competencies they require for effective performance: Implications for training and development. *Personnel Review* 29 (1): 92–105.

Hellriegal, D., S. Jackson, and J. Slocum. 2005. *Management: A competency based approach*. Mason: South Western.

Henkel, M. 2000. *Academic identities and policy change in higher education*. London: Jessica Kingsley Publishers.

Hoppe, S. 2003. Identifying and nurturing potential academic leaders. *New Directions for Higher Education* 124: 1–12.
Jackson, M.P. 1999. The role of the head of department in managing performance in UK universities. *The International Journal of Educational Management* 13 (3): 142–149.
Kallenberg, T. 2007. Strategic innovation in HE: The roles of academic middle managers. *Tertiary Education and Management* 13 (1): 19–33.
Kearney, M.L. 2008. The role of post-graduate education in research systems position paper. UNESCO/DCU Workshop on Trends in Post-Graduate Education, Dublin City University, 5–7 Mar 2008.
Ladyshewsky, R.K., and R. Taplin. 2013. Factors influencing mode of study preferences in postgraduate business students. *The International Journal of Management Education* 11: 34–43.
Linden, J., M. Ohlin, and E.M. Brodin. 2013. Mentorship, supervision & learning experience in PhD education. *Studies in Higher Education* 38 (5): 639–662. https://doi.org/10.1080/03075079.2011.596526.
Mercer, J. 2009. Junior academic-manager in higher education: An untold story? *International Journal of Educational Management* 23 (4): 348–359.
Meyer, H.-D. 2002. The new managerialism in education management: Corporatisation or organisational learning? *Journal of Educational Administration* 40 (6): 534–551.
Mok, K. 2003. Globalisation and higher education restructuring in Hong Kong, Taiwan and Mainland China. *Higher Education Research and Development* 22 (2): 117–129.
Morris, T.L., and J.S. Laipple. 2015. How prepared are academic administrators? Leadership and job satisfaction within US research universities. *Journal of Higher Education Policy and Management* 37 (2): 241–251. https://doi.org/10.1080/1360080X.2015.1019125.
Matheson, I. 2001. Culture change through applying competencies in development centres. *Industrial and Commercial Training* 33(4): 131–134.
New, G. E. 1996. Reflections. *Journal of Managerial Psychology* 11(8) 44–51.
Nguyen, TlH. 2012. Identifying the training needs of Heads of Department in a newly established university in Vietnam. *Journal of Higher Education Policy and Management* 34 (3): 309–321.
Nickson, A. 2014. A qualitative case study exploring the nature of new managerialism in UK higher education and its impact on individual academics' experience of doing research. *Journal of Research Administration* 45 (1): 47–80.
Osseo-Asare, A., D. Longbottom, and P. Chourides. 2007. Managerial leadership for total quality improvement in UK higher education. *The TQM Magazine* 19 (6): 541–560.
Potgieter, I.L., and M. Coetzee. 2010. Management competencies in higher education: Perceived job importance in relation to level of training required. *SA Journal of Human Resource Management* 8 (1): 1–10.
Preston, D., and D. Price. 2012. I see it as a phase: I don't see it as the future': Academics as managers in a United Kingdom university. *Journal of Higher Education Policy and Management* 34 (4): 409–419.
Qualter, A., and I. Willis. 2012. Protecting academic freedom in changing times: The role of Heads of Departments. *Journal of Educational Administration and History* 44 (2): 121–139.
Quinn, R. E., and G. Spreitzer. 1997. The road to empowerment: seven questions every leader should consider. *Organisational Dynamics* 26(2): 37–49.
Quinn, R.E. 1988. *Beyond rational management: Mastering the paradoxes and competing demands of high performance*. San Francisco: Jossey-Bass.
Quinn, R.E., and G. Spreitzer. 1991. The psychometrics of the competing values culture instrument. *Research in Organisational Change and Development* 5: 115–142.
Quinn, R.E., S. Faerman, M. Thompson, and M. McGrath. 2003. *Becoming a master manager*. New York: Wiley.
Quinn, R. E., S. Faerman, M. Thompson, and M. Mc Grath. 2015. *Becoming a master manager*. New York: Wiley.
Rausch, E., H. Sherman, and J. B. Washbush. 2002. Defining and assessing competencies for competency-based, outcome-focused management development, *Journal of Management Development* 21(3): 184–200.

Rindfleish, J. 2003. Segment profiling: Reducing strategic risk in higher education management. *Journal of Higher Education Policy and Management* 25 (2): 147–159.
Santiago, R., T. Carvalho, A. Amara, and V.L. Meek. 2006. Changing patterns in the middle management of higher education institutions: The case of Portugal. *Higher Education* 52: 21–50.
Scholtes, P. R. 2009. The new competencies of leadership, *Total Quality Management* 10(4–5): 704–710.
Sherman, R., J. Tibbetts, D. Dobbins, and D. Weidler. 2001. *Management competencies and sample indicators for the improvement of adult education programs*. Washington, DC: Pelavin Research Institute.
Spendlove, M. 2007. Competencies for effective leadership in higher education. *International Journal of Educational Management* 21 (5): 410–417.
Stratford, E. 2012. A genuine career or impossible heroism? Experiencing the role of the Head of School: An Australian case study. *Journal of Higher Education Policy and Management* 34 (3): 225–238.
Stuart, R., and P. Lindsay. 1997. Beyond the frame of management competenc(i)es: Towards a contextually embedded framework of managerial competence in organisations. *Journal of European Industrial Training* 21 (1): 26–33.
Teelken, C. 2012. Compliance or pragmatism: How do academics deal with managerialism in higher education? A comparative study in three countries. *Studies in Higher Education* 37 (3): 271–290.
Temple, J., and J. Ylitalo. 2009. Promoting inclusive (and dialogic) leadership in higher education institutions. *Tertiary Education and Management* 15 (3): 277–289.
Terrion, J.L. 2006. The impact of a management training program for university administrators. *Journal of Management Development* 25 (2): 183–194.
Thomas, J., and P. Sireno. 1980. Assessing management competency needs. *Training & Development Journal* 34 (9): 47–51.
Thompson, J., and J. Harrison. 2002. Competent managers? – The development and validation of a normative model using the MCI standards. *Journal of Management Development* 19 (10): 836–852.
Townsend, B. K., and S. Bassoppo-Moyo. 1997. The effective community college academic administrator: necessary competencies and attitudes. *Community College Review* 25(2): 41–58.
UNESCO Forum on Higher Education, Research and Knowledge. 2008. Trends and Issues in postgraduate education: Challenges for research. International Experts' Workshop Final Report.
Vilkinas, T., and G. Cartan. 2015. Navigating the turbulent waters of academia: The leadership role of programme managers. *Tertiary Education and Management* 21 (4): 306–315. https://doi.org/10.1080/13583883.2015.1082189.
Weinberg, A.M., and G. Graham-Smith. 2012. Collegiality: Can it survive the corporate university? *Social Dynamics: A Journal of African Studies* 38 (1): 68–86.
Winter, R. 2009. Academic manager or managed academic? Academic identity schisms in higher education. *Journal of Higher Education Policy and Management* 31 (2): 121–131.
Winter, R., and J. Sarros. 2002. Corporate reforms to Australian universities: Views from the academic heartland. *Journal of Institutional Research* 11 (2): 92–104.
Wolverton, M., R. Ackerman, and S. Holt. 2005. Preparing for leadership: What academic department chairs need to know? *Journal of Higher Education Policy and Management* 27 (2): 227–238.
Yu, T., and N. Wu. 2009. A review of study on the competing values framework. *International Journal of Business and Management* 4 (7): 37–42.
Yukl, G., and R. Lepsinger. 2005. Why integrating the leading and managing roles is essential for organisational effectiveness. *Organisational Dynamics* 34 (4): 361–375. X13.
Zenger, J., and J. Folkman. 2003. *The extraordinary leader: Turning good managers into great leaders*. New Delhi: Tata McGraw-Hill Publishing.

3 The Impact of Neoliberalism on Designing and Developing Postgraduate Education in Australian Universities

Diane Phillips

Contents

Abstract

This chapter explores the impact of an increased presence of neoliberalism in Australian higher education research environment and considers how today's university research environment is changing work readiness of postgraduate students in the future. This is a time when neoliberal movement and logic are transforming universities from domestic social institutions to competitive market-based and global export institutions. As a result, the speed of change has intensified neoliberal logic into governance and practice within universities. As a consequence, higher degree research programs and supervisors need to prepare new academics to join a vastly different working world than those of their supervisors. Joining the extant academic conversation means to survive and thrive the transformational change that will be an ongoing concern. A world in

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which work is measured by numbers, where by academics is quantified, audited, counted and managed through surveillance at distance, the numbers and norms set by university administrators and executives. It will be an entrepreneurial life that requires candidates to manage the tensions of being competitive, co-optive, collaborative, and collegial as a whole. Everyday academics are required to be strategic thinkers and demonstrate behavior that fits with university compliance and strategy. As a result, universities are required to rethink the PhD education, training, and supervision programs for postgraduate students. Changing the focus from being on developing research skills as a form of organizational apprenticeship to being more focused on the preparation required to survive and thrive in a world where the neoliberal movement is seeping into academic everyday lives.

Keywords
Neoliberalism · Postgraduate education · Capacity building · Academic training and supervision

Introduction

The neoliberal movement and logic have fundamentally transformed the context in which universities and their research governance and practice have changed the work of an academic. As a result, the ripple effect on this changing space sees a flow of neoliberal ideas into the design and development of postgraduate education in Australian universities. The most visible form of neoliberal logic is the marketization of education and research in universities. This can be seen in how rankings, auditing, surveillance, and entrepreneurial aspects of academic life are everyday occurrences. The research candidate will start working in the world in which competiveness, innovation, and commercialization are the norms. Unsurprisingly, the changes to postgraduate research training programs have been focused on research training in this context. However, this shift in the adopting neoliberal logic has occurred in all aspects of the everyday work of academics, with a more ingrained approach. Academics are measured on much more than research. As such, program managers need to focus on assembling a more rounded approach when building capacity for postgraduate education programs. As "The success and reputation of universities is dependent on the calibre and excellence of doctoral programmes. . .success in doctoral education has many definitions, but a timely completion, exciting and exhilarating candidature, and teaching and publishing experience are all effective starting points" (Brabazon 2016: 14). More broadly, intended changes for all-round capacity mean teaching, research, engagement, service, and administration, for the new academic in postgraduate training programs, as new academics need to hit the ground running in a the neoliberal world of academia. Meeting the expectations in a neoliberal university not only means postgraduate training programs need to provide support for the intended consequences of change but also the unintended consequences of assembling the new academic in training in a neoliberal world. For the new academic, this means managing themselves in an environment which asks high levels of administration,

materiality, and competiveness while being collaborative and collegial. Whilst identifying problems and gaps, seeing them as opportunities, and developing entrepreneurial skills, qualities, and attributes. This involves continually learning about research and starting a teaching career, all the while under the constant gaze in the form of an electronic panopticon (Bentham 1838) or surveillance of the university. Surveillance also involves self-surveillance and is also a space where the watched are watched by their colleagues as competitors. The challenge for postgraduate program managers is to understand and embed techniques more closely to manage this neoliberal logic into their programs. For the PhD candidate, the challenge "is to think about it [neoliberal impact] without thinking with it [embedded neoliberal logic]" (Lynteris 2013: 13).

Methodology and Case

The methodology this case study has applied is based on an ethnographic imaginary (Brady and Lippert 2014). The ethnographic methodology employed "utilizes qualitative and ethnographic research methods to gather data on university actors practice, reasoning and knowledge generation" (Khazraee and Khoo 2011). This research takes a critical institutional ethnographic approach to observe and problematize the social relations or transfer of neoliberal logic (Smith 2005). Ethnography is "a descriptive account of social life...in a particular social system based on detailed observations of what people actually do . . .in face to face settings" (Johnson 2000: 111). Critical ethnographers use this method in order to make change (Thomas 1993), and institutional ethnography explores the ordinary daily activity of participants (Smith 2005), otherwise hidden (Smith 1987; Thomas 1993; Johnson 2000). This form of ethnography recognizes the authority of experience (Smith 1987) and brings into question the common, mundane, and everyday narratives about neoliberal logic, movement, and power. The research design extracted and analyzed the "thick description" collected from 34 interviews and photographic interviews and eight focus groups, with 36 participants. The participants come from a range of standpoints (Hartsock 1983). Their explicit voices, experiences, and practices involved are from executive management, senior and expert researchers, university administrators, middle managers, and early career researchers. The participant narratives "documented how neoliberal rationalities are reshaping institutions and how we understand and act upon ourselves (subjectivities) by bringing together an analytics of governmentality with an ethnographic imaginary" (Brady and Lippert 2014: 22).

Literature Review

The research underpinning this chapter explores the impact of the increased presence of neoliberalism in today's higher education research environment. In defining the term neoliberalism from the literature, it has been stated that the neoliberal movement is considered a broad cultural phenomenon (Mudge 2008) and that "neoliberalism is the financialization of everything" (Harvey 2005: 33). However, neoliberal ideas cannot simply be defined as just an economic or political paradigm (Harvey 2005) in which both

economic and political logic are embedded in social (Dugdale 2010 in Higgins, V., S. Kitto and W. Larner) of the twenty-first-century life. Neoliberal logic moves across classes, governments, economies, and power and is now a broad social movement, which has stretched beyond its origins and original context (Mudge 2008). As a result, neoliberal logic is a network of intertwined circulating elements of power (Dean 2015), as such is reasoned and organic and appears normal in the micro spaces of the academe. The movement of neoliberal network of logic transpires across global, national, and local spaces and has developed strong linkages, making these norms hard to see and observe and more difficult to challenge. Neoliberal logic seeps right into the bodies of academic actors (Foucault 1979) and circulates through the local spaces and back and forth and in between. Institutionally neoliberal logic is embedded in the strategic planning of higher education institutions and into the everyday spaces of academic practices, such as materials and forms. From the global to the local, this has the unintended consequences of creating twists and turns (Argyris 1968) in the ways of being and knowing of educational institutions and university actors involved. As such, institutions are rooted in norms and standards pertaining to being market driven, whereby buying and selling of knowledge is a natural way of being. This is a time when neoliberal logic is transforming universities from domestic social institutions to competitive market-based and global export institutions (Heath and Burdon 2013), which must have implications of change for postgraduate program offerings.

Changes in the Australian context were triggered by the global financial crisis (Miller 2016) and stronger neoliberal governmentality (Rose 1999). Since the 2008 global financial crisis, the rate and speed of change in university governance and practice has intensified and appears as a more fluid concept, and academic life is moving at a faster pace (Harvey 2005); with this shift come higher expectations and pressure on academics in all aspects of academic work. The 2008 global financial crisis consolidated the adoption and embedding of neoliberal ideas in the research education environment. As a result, many Australian universities are increasingly positioning themselves as enterprise universities, as they are in a quasi-market space (Agasisti and Catalano 2006; Marginson and Considine 2000). This is a position where universities are still funded by the government; on the other hand, they are also immersed in the marketization of research, knowledge, and intellectual labor (Marginson and Considine 2000) and are self-funding research. This form of governmentality is transforming universities, as research, innovation, and commercialization are increasingly important to Australia in the global knowledge economy. This not only signifies a holistic approach to how PhD programs are required to assemble academics in training for the future shift but also explores the relationship between individual academics, their institutions, and the work done in market-based institution.

Assembling the New Neoliberal Academic

This changing context, academic role, and purpose has wider implications for post-graduate student education. The evolving and shifting education environment needs to be clearly understood (Boker 2012). For many, the most noticeable change is the

holistic set of skills, fundamental prior to entering the workplace. Work readiness is defined in terms of capacity to attract funding and partners and to commercialize research, evidence of quality publishing, and strategic capacity. Others are to demonstrate management and administrative skills, teaching quality, leadership, and engagement with industry combined with a high level of technology skills, and undertaking university and community service (Boker 2012) while being under surveillance and in a competitive and audited space. In these context universities are required to rethink research education, training, and supervision of postgraduate students, not only focused on developing research skills as a form of organizational apprenticeship but being more focused on the knowledge, skills, and qualities required to succeed in a very different academic working world (Whitsed and Green 2015), positioned within the neoliberal environment surrounding higher education.

Competiveness at All Levels

Changes to higher education, as a result of globaliztion, can be found at local level, in a new form of competitivness. However, global rankings for institutions and countries are vital to the success, instigsatitng competitiveness at all levels in higher education, the macro or global, through the meso asnd into the micro or local. The World Economic Forum defines competitiveness as "the set of institutions, policies and factors that determine the level of productivity of a country" (The Global Competitiveness Report 2016–2017). From this global context, neoliberal logic of competiveness seeps into the everyday lives of academics by means of a network of capillary power (Foucault's 1977). As such, PhD programs need to prepare new academics to navigate the competitive and power-based workplace doctoral candidates will move into during and post their candidature (Brabazon 2016). Branding is one aspect of being competitive for doctoral programs to include. Branding as an academic means research and teaching narratives, and publishing earlier, which consists of both academic and nonacademic writing, including social media, web pages, and blogging. This creates unpaid and administrative type work in an academic space. Academic marketing and branding themselves need the need to self-promote, so they might meet their performance review criteria in order that they can fund their own research, networking opportunities, and conference attendance.

University research training programs need to explore the unintended consequences of competiveness. Whereas competition in academia has always been a concept worth considering, neoliberal logic has increased competition greatly. Therefore, institutions should provide higher degree research supervisors with an understanding about how competiveness will impact on PhD candidates and how they should manage the practice-based tensions found in the academic environment. These practices are competition, co-option, collaboration, and collegiality, all which can occur simultaneously. Supervisors are aware academics compete. However, tensions arise as the space between colleagues, supervisors, and candidates shifts and becomes more competitive and competitive logic seeps into the everyday spaces and becomes a norm. Working with supervisors and competing with them for

publication space are the new reality, as publishing is expected earlier. As an example, one professor told a candidate, "you are in your final year, you are now my competitor, we are competing for the same publishing space" (AG). However, many academics are still coming to terms with the higher levels of competition in the current research environment; the candidate and the supervisor are in a co-optive relationship, one where they are working toward the thesis, which should be considered a collegial collaboration. However, for some academics, competition is at the forefront of their success, changing the interactions between supervisors and candidates. As a result, HDR programs need to provide understanding and mechanisms for candidates to manage this competitive and co-optive element, leading to a more liminal space for collegiality and the supervisor and student relationship.

Collaboration Versus Collegiality

Collaboration is also being taken to a new level; however, collaboration is related to a means to an end: research outputs, university key performance indicators, and academic performance review metrics. From the literature, collaboration can be described as an academic researcher's willingness, enthusiasm, and preparedness to work together with others in order to accomplish institutional goals (Bedwell et al. 2012). Collaboration is an important element in strategic and operational planning for research and links collaboration to competition, cooperation, and co-option (Clifford and Tewdwr-Jones 2013). However, in order to collaborate, there is a need to network, develop trust, and build relationships and to generate agency at a grassroots level, which is a collegial practice. What is important is that the language in universities has changed from collegiality to collaboration, but the two are not the same. Academics need to demonstrate collaboration; however, what is required for PhD programs is collegiality for new academics to flourish and progress. Trust and relationship building through networking is imperative. This is a skill set needed in doctoral programs. Collegiality is about human generosity and spirit, with no means to an end.

The Entrepreneurial Academic

Many Australian universities have adopted an entrepreneurial or enterprise vision and culture (Marginson and Considine 2000). Neoliberal logic has seeped into performance management criteria, which has seen the universities looking for alternative sources of income to fund research, to be more financially secure in a quasi-market funding space and strategic and managerial in governance to meet universities' entrepreneurial visions (Brown 2015). The shifting academic and specifically research environment requires academics to be entrepreneurial, to bring in money, and to conduct research. Many university strategic plans and academic key performance indicators have listed these criteria for success. As said, PhD students must start developing their entrepreneurial skills earlier (Ronstadt 1990). It is therefore imperative that entrepreneurial skills such as recognizing and

sourcing opportunities and revenue streams, networking and collaboration, and industry engagement are gained or have been acquired. Securing opportunities to secure funding from new markets and to publish alternative journals/markets are complex tasks, requiring higher-order thinking skills that have an entrepreneurial focus. The entrepreneurial academic must develop stronger interpersonal skills and networking abilities, be able to build trust, demonstrate integrity, and build their own reputation at an earlier stage and in many universities. In many cases with little or no funding, support for conferences in order to undertake networking internationally, nationally, and locally and join the academic conversation much earlier is necessary in today's academic environment. Teaching, engagement, service, and research will all need to demonstrate entrepreneurial innovative approach.

Surveillance

In today's academic environment, surveillance and competition go hand in hand. Surveillance occurs from the center of the university and puts academics under "constant and unremitting pressure" (Bentham 1838: 63) of being under the gaze of the institution and each other. This in turn constitutes self-monitoring or self-surveillance (Foucault 1979), and as academics are being watched, they watch themselves and each other. There is an increasing reliance on metrics, as such surveillance occurs in order to audit and rank individuals, faculties, universities, and countries. Contributions in all areas of work are quantitative, numerical, and counted, and this is the predominant tool for performance management (Marginson and Considine 2000). Across the globe, managerialism and related performance management are based on administrative surveillance by means of auditing and metrics (Morris 2011). Quantiication of this kind simplifies a complex and messy academic workspace, and reducing academics to ticking boxes for their performance review as required, is enabling comparative approaches and measurement. This simplification of academic work brings forth higher levels of performance management, accountability, responsibility, and self-checking and auditing. By its very nature, managing surveillance and other forms of competition, generated by metrics, measurement, and auditing needs to be addressed in postgraduate training programs at an early stage. This will raise the awareness of PhD candidates early in their candidature, as this is essential to transition as an early career academic and post PhD. Raising awarness earlier creates an stronger understanding of the changing academic environment in order to manage the tensions, competitive and co-optive nature that surveillance and auditing creates. Understanding competition better, and managing oneself in a complex space can result thriving, not just surviving under the constant gaze of university systems and competitive colleagues.

For some, thriving means co-option; competing and collaborating at the same time with the same academics are a strange juncture. The tension of the constant gaze of surveillance by means of auditing and the power relations generated by the network of capillary power have simultaneously created intended and unintended consequence of survival, that is, compliance and obedience, fitting in and performing

to norms and standards or "doing what I'm told." Strange indeed for an academic culture! It has created in the mind of an academic an "obedient subject . . .an individual who is subject to habits, rules, order, an authority that was exercised around and upon him, in which [s/]he must allow to function automatically inside them" (Foucault 1977: 128–129). Many of the academics interviewed noted that they conform out of self-interest or preservation or self-care. Michel Foucault refers to this self-care related to the university, faculty, discipline, and specifically for the individual, as universities conduct the conduct (Foucault 1979) of their staff. What needs to be considered is that over time the body and mind of the subject, the academic, is subsumed by the gaze of the surveillance (the panopticon). As a result, passive conformity or pragmatism (Teelken 2012) may be the result, and many are becoming compliant as noted by Matt an early career academic "I am happy to be compliant and do what I am told. . .as long as I know what to do. . .." This has implications for academic judgment within administrative calculation, reducing decision-making while raising levels of compliant and conforming behavior by academics. From the data collected, this is more of an issue for early career academics than experienced academics. The sense of being watched, performance managed, and how to conduct oneself is expected to become a permanent part of an academic's identity. Discussing the unintended consequences of this for early academics is important.

The Tools of Surveillance: Administration and Materiality

Technology and digitalized administrative systems appear as the productive solution for cost efficiencies and effectiveness for university administration is also a space whereby academic work can be counted and collected for auditing. As a result of surveillance and auditing, university administration systems (research, engagement and teaching) increase the academic administrative input and workload. Linked digital applications and software require higher levels of knowledge, learning, and time to undertake these tasks. However, as the engine for administration, the academic undertakes the administrative and material work. This creates a higher frequency of administrative work for academics, which increases as auditing and quantification of academic life occurs. It is important for early career academics and program designers to be aware of the increasing level of administrative work required, in order that the university can code, measure, and audit outputs. This form of neoliberal materiality is found in the everyday aspects of academic life. It is important for postgraduate education programs to make students aware of the embedded neoliberal logic found in university administrative objectives and everyday objects, as well as more broad policy elements such as research frameworks and associated grant funding forms. This is a space and time where a materiality is changing the fabric of university life (Polanyi 1944/1957) and explores how neoliberal logic in the form of materials filter into the "body" of an academic and more broadly into the academic body, at a given moment in time (Foucault 1994) through consumption and use of everyday materiality (Foucault 1977).

Conclusions

Neoliberal logic and the marketization of education and research have raised the competitiveness of universities globally. Rankings, auditing, and surveillance appear in all aspects of academic life and seep into research training programs as neoliberal logic is a continuous movement. However, the unintended consequences (Argyris 1968) of neoliberal movement and logic for postgraduate education in Australian universities have impacted on the ways of being and knowing for university actors, changing everyday academic life. It is essential that postgraduate candidates are made aware of this shifting environment and how neoliberal ideas are shaping university culture. The university staff managing postgraduate programs of support and training need to embrace a fresh approach toward a holistic perspective for capacity building of future academics. Looking at what an academic will need to achieve, we could think the all-round academics are superheroes of the future. PhD candidates of today, the academics of tomorrow will need to publish earlier and more productively, work with social media, and understand the changes to impact and research metrics, demonstrating this to their PhD candidates. Who will need to compete on many levels, with strong personal brand and research narratives for public life that are strategically positioned to fit within university strategies. They will need to have the capacity to be compliant, collaborative, competitive, co-optive, critical thinkers, and collegially oriented while managing these tensions. Collaboration also means working in a cross-disciplinary and interdisciplinary manner in a broad range of teams and countries and with a range of industries. They will be lifelong learners: teaching, research, administration, engagement, and service orientated from the global to the local and have the capacity to apply all their skills and knowledge to increase teaching quality and flexibility and increase research funding and outputs. They will have highly developed entrepreneurial, interpersonal, social, and networking skills and solve problems creatively and innovatively. These superheroes will also need to provide academic leadership: work with colleagues and students to support, mentor, coach, and guide, all the while under constant gaze of surveillance by the university, colleagues, and themselves. Confronting this for postgraduate program managers is the challenge. For the PhD candidate, managing the neoliberal logic without "thinking with it" (Lynteris 2013: 13) is imperative if PhD candidates are to retain the essential elements of being and knowing as academics.

References

Academic system is Jack Grove February 10th, 2016.

Agasisti, T., and G. Catalano. 2006. Governance models of university systems—towards quasi-markets: Tendencies and perspectives: A European comparison. *Journal of Higher Education Policy and Management* 28 (3): 245–262.

Argyris, Chris. 1968. Some unintended consequences of rigorous research. *Psychological Bulletin* 70 (3p1): 185.

Bedwell, W.L., J.L. Wildman, D. Diaz Granados, M. Salazar, W. Kramer, and E. Salas. 2012. Collaboration at work: An integrative multilevel conceptualization. *Human Resource Management Review* 22 (2): 128–145.

Bentham, J. 1838–43. *The works of Jeremy Benham*, ed. J. Bowring, Edinburgh, Tait, 11 vols.

Boker, J. 2012. *University of the future a thousand year old industry on the cusp of profound change*. Australia: Ernst & Young.

Brabazon, Tara. 2016. Winter is coming: Doctoral supervision in the Neoliberal University. *International Journal of Social Sciences & Educational Studies*, 14–34.

Brady, M.A., and R.K. Lippert, eds. 2014. *Practices of governing neoliberalism, governmentalities, and the ethnographic imaginary*. Toronto: University of Toronto Press.

Brown, W. 2015. *Undoing the demos neoliberalism's stealth revolution*. Cambridge: MIT Press.

Clifford, B., and M. Tewdwr-Jones. 2013. *The collaborating planner: Planning in the Neoliberal Age*. Bristol: Policy Press.

Dean, M. 2015. Neoliberalism, governmentality, ethnography: A response to Michelle Brady. In *Foucault studies*, No. 20, 2015, 356–366 –Letter.

Dugdale, A. 2010. In *Calculating the social: Standards and the reconfiguration of governing*, ed. V. Higgins, S. Kitto, and W. Larner. Basingstoke: Palgrave Macmillan.

Foucault, M. 1977. *Discipline and punishment*. New York: Random.

Foucault, Michel. 1994. On the genealogy of ethics. In *Ethics: Subjectivity, and truth: Essential works of Foucault 1954–1984*, ed. Paul Rabinow, Vol. 1, 253–280. New York: The New Press.

Foucault, M. 1978–1979. *The birth of biopolitics: Lectures at the College De France*.

Hartsock, N. 1983. *Money, sex, and power: Toward a feminist historical materialism*. New York: Longman.

Harvey, D. 2005. *A brief history of neoliberalism*. Oxford: Oxford University Press.

Heath, M., and Peter D. Burdon. 2013. Academic resistance to the Neoliberal University. *Legal Education Review* 23: 7.

Johnson, A.G. 2000. *The Blackwell dictionary of sociology*. 2nd ed. Oxford: Blackwell.

Khazraee, E., and M. Khoo. 2011. Practice-based ontologies: a new approach to address the challenges of ontology and knowledge representation in history and archaeology, Research Conference on Metadata and Semantic Research, Springer.

Lynteris, C. 2013. The state as a social relation: An anthropological critique. *Anthopology & Materialism*, 1 (Autumn 2014).

Marginson, S., and Considine, M. 2000. *The enterprise university: Power, governance and reinvention in Australia*. Cambridge University Press, Australia.

Miller, Toby. 2016. The Australian, April 6th, *To all new academics, value your research.*

Morris, L. 2011. From collegial engagement to performance management: The changing academic landscape in Australia (Doctoral dissertation).

Mudge, S.L. 2008. What is neo-liberalism? *Socio-Economic Review* 6 (4): 703–731.

Polanyi, K. 1944/1957. *The great transformation*. Boston: Beacon Press.

Ronstadt. 1990. The educated entrepreneurs: A new era of entrepreneurial education is beginning. Entrepreneurship education: Current developments, future directions (1990): 69–88.

Rose, N. 1999. *Powers of freedom: Reframing political thought.* Cambridge University Press, Australia.

Smith, D. 1987. *The everyday world as problematic*. Boston: Northeastern University Press. 1987. Print.

Smith, D.E. 2005. *Institutional ethnography: A sociology for people*. Lanham: Alta-Mira Press.

Teelken, C. 2012. Compliance or pragmatism: how do academics deal with managerialism in higher education? A comparative study in three countries. *Studies in Higher Education, Taylor Francis Online,* 37 (3): 271–290.

The World Economic Forum, The Global Competitiveness Report 2016–2017. http://reports.weforum.org/global-competitiveness-index/. Online accessed 28 Sept 2016.

Thomas, J. 1993. *Doing critical ethnography*. CA: Thousand Oaks, Sage.

Whitsed, C., and Green, W. 2015. Rethinking supervisor for the 21st century, Centre for University Teaching and Learning at Murdoch University in Perth, Western Australia, University world news 26th July 2015.

Alternative Research-Related Spaces in Postgraduate Research Training

4

E. S. Grossman

Contents

Abstract

Tertiary education transformation and associated neoliberalism and new public management policies have created a cascade of events which has impacted upon the supervisor-postgraduate student dyad. Within the health sciences, this cascade contains issues of supervisor workload, student massification, clinical research, academic staff reduction, financial strategies, and the push for mode 2 knowledge production among others which has had negative effects on the quality and quantity of supervisor-postgraduate interaction time. Formal university training initiatives to supply research skills previously acquired from supervisors are deemed insufficient to meet all current postgraduate needs. Informal alternative research-related spaces, especially those with academic staff involvement, have the potential to serve as learning spaces to supply disappearing supervisor skills and experience. Such spaces are deserving of greater scrutiny and future research,

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as they could provide a workable solution to the intractable tensions between the numbers of values and goals arising in postgraduate learning within South African and other higher education environments.

Keywords
Supervisor · Postgraduate · Research · Training · Alternative spaces · Peer group · Workload

Introduction

Yet another wind of change is floating through the passages of academe – an institution shaken to its foundations by knowledge society transformations, massification of the student cohort, neoliberal ideals, and new public management (NPM) policies. This wind is still a waft, drifting through corridors and swirling around laboratories, propelled by the passing of a postgraduate research student (PRS), notebook in hand, anxiously hurrying to seek advice and guidance. Who is she going to? In all likelihood, it is not her supervisor.

Shifting allegiances within the supervisor-PRS dyad has been ongoing for well over two decades. Cullen et al. (1994) reported that 25% of PhD students received "unofficial supervision" from others with a staggering 50.8% of Australian supervisors/advisers providing additional supervision to students for whom they are neither an appointed supervisor nor adviser. A more recent study of PhD thesis acknowledgements is further revealing: over half of academic and conceptual advice is given by academics and professional colleagues other than supervisors (Mantai and Dowling 2015). Finally Kemp et al. (2014) noted that biomedical PhD students, at two elite universities in the UK and USA, perceived that nonsupervisory peers were as important as supervisors in learning relationships. The question that begs answering is, how has it come about that the very core of PRS learning, the supervisor-student dyad, is drifting apart? What are the consequences of this separation, and how does it affect our PRS hurrying through gloomy concrete corridors, notebook in hand, seeking answers?

Overview

The end of the twentieth century experienced major shifts within higher education as a result of universities situationally repositioning themselves to optimally serve as a resource for the knowledge economy. Together with massification of the student body, academic consumerism needs and demands for relevance in curricular development, detailed bureaucratic requirements and guidelines have been introduced to more efficiently meet utilitarian day-to-day academic activities. Consequently tertiary education institutions worldwide have been on a trajectory to maximally achieve their goals in the increasingly competitive global

environment, while adhering to ever-greater regulation of university activities via new public management (NPM) systems and neoliberal translations of higher education. Bleiklie and Henkel (2005) observe that, although the trajectory follows a common direction, tertiary institutions around the world have taken multiple pathways to meet their transformation challenges. They point out that at different levels, individual trajectories are affected by any number of issues which can be economic, national policy, institutional factors, academic disciplines, the individual academic, resources, and the level of skills available at any point in the pathway. To complicate matters, profound change may take place at one level, for example, in declared policy goals and the ideology underpinning them, without being balanced by corresponding changes at an institutional level or at the level of individual academic practice.

Much which has been written about continuity and change in higher education has concentrated on research, patents, technology transfer, and output-oriented functions of entrepreneurial universities with abundant resources (Rhoades 2005). Far less has attended to the rate limiting step of academic departmental realities, at the level of the basic production unit or PRS, probing research and the teaching thereof, within the managerial push to ramp up PRS graduation and publishing revenues. Furthermore, research on postgraduate learning has disproportionately focused on the social sciences and in particular education, with an acknowledged gap in the literature in the health sciences (Kemp et al. 2014). Strong evidence exists to suggest that cultures of academic practice (and thus learning) differ greatly across disciplines (Kemp et al. 2014). Accordingly, the extrapolation of findings from one sphere of academia to another is often difficult. For these reasons, I explore what Rhoades (2005) refers to as the "academic heartland" of a discipline-based academic faculty where internally staff are dealing with concrete realities of "doing more with less" (Rhoades 2005; van der Walt et al. 2002) with a diverse postgraduate population and degree offerings, both clinical and biomedical, at master's and doctoral level.

South Africa has embraced the ideals of neoliberalism and introduced a wide range of institutional interventions to position itself firmly in the new higher educational landscape. These interventions appear to have paid off as South Africa consistently has four out of the five African universities that appear in the Shanghai Jiao Tong Academic Ranking of World Universities (Cloete 2016). This comes at a price. Changes to the government subsidy model, aimed to bring efficiency and equity into the educational system, reward research and PRS completion with little attention paid to teaching. Thus our hurrying PRS will experience an increased pressure on speedy degree completion and an expectation that her thesis results will be published in peer-reviewed, high-impact international journals. Academics are expected to raise funds externally to support their research (Wright 2016). The success of the fundraising will dictate the scope of resources and facilities obtainable and affect the range of research our anxious PRS can engage with. University fixed costs are reduced through such means as outsourcing, privatizing, increasing the proportion of part-time and temporary personnel at the expense of permanent posts, and divestment of "noncore" activities, all of which bring with them negative

consequences (van der Walt et al. 2002; CHE 2015). Significant in terms of doctoral studies in South Africa is the annual increase of academic staff at 2.9% per year (between 1996 and 2012) with PhD enrollments at 6.4% per year. This has changed doctoral enrollment-staff ratios from 1:1 to 2:1 (Cloete et al. 2015), doubling the supervisory load, and our anxious PRS must now vie with twice as many others for the attention of her supervisor.

What is often overlooked in published higher-degree throughput studies, with its emphasis on PhDs, is the additional burden of master's students who also require supervision, often at an intense level, to provide the best foundation for future doctoral study or specialist practice. To keep the South African PhD pipeline flowing, the conversion rate of one doctoral student arising from every seven master's candidates must be maintained or better still improved (ASSAf 2010). In addition and unique to the health sciences is the recent (2011) qualification requirement whereby registrars (trainee clinical specialists) must submit and pass a research project as part of their MMed/MDent degree. In this, South Africa is following a worldwide trend (Patel et al. 2016), but for the South African Faculties of Health Science, this means that additional research and supervisory resources need to be found for the influx of MMed/MDent research projects. This clinical cohort has swelled the existing registered PRS cohort by over a third in the past few years. From a supervisory perspective, the additional supervisory workload is daunting, but from the NPM side, the potential of published MMed/MDent research gives universities opportunities to increase their research output and receive state subsidy, since all trainees are formally registered postgraduate students. Thus the increased postgraduate load at master's level is offset by the ability to productively process the student as client. A further complication is the large numbers of clinical specialist academic staff, who, for historical reasons, lack a formal research qualification and hence cannot supervise the MMed/MDent or any other research degree. This is a situation experienced widely in the health care sector (Grossman and Crowther 2015) and at our "academic heartland" spreads research and supervisory resources very thinly, forcing existing supervisors to often act outside their area of expertise.

In addition to neoliberal shifts, South Africa has had to adapt its tertiary education goals to accommodate national policy, consequent to the political handover in 1994. This has brought about a wide array of transformation-oriented initiatives, to affect issues of democracy, equity, and redress as embodied by the South African *Constitution* of 1996. In doing so, a number of difficult, competing goals have arisen, especially in the context of inadequate public finances and academic development initiatives to support underprepared, largely poor, culturally diverse, black, or working class students seeking a university degree. With enabling legislation, past discrimination is redressed and issues of representivity and equal access for all tiers of staff and students ensured. In consequence, boundaries between neoliberal tertiary education transformation and those due to political and ideological transformation are blurred, and academic staff sometimes find it difficult to distinguish which change is due to what transformation initiative.

Time to Completion

Despite an academic environment fettered by an economic downswing, underprovided supervisory capacity (ASSAf 2010), a steady reduction in permanent academic staff numbers (CHE 2015), and regional influences where there are already 50% more students per lecturer in Sub-Saharan Africa than the global average (British Council 2014), South Africa has experienced a pleasing and consistent growth in doctoral enrollments over the past decade (CHE 2015). Furthermore, there remains an ongoing and increased pressure on academic staff to ramp up doctoral enrollments, regardless of low postgraduate completion rates and prolonged registration times (Louw and Godsell 2015).

Dropout and graduation delays have profound consequences for the economy, the university, and the postgraduate alike. As elsewhere, the South African government expects prompt, efficient, and cost-effective research graduate returns on its university subsidy investments to meet the developmental needs of the country (Habib and Morrow 2007; ASSAf 2010; Gardner 2010). The bulk of the subsidy monies is released on successful graduation, making timeous completion imperative for the university to achieve economies of scale. Not only are South African universities financially disadvantaged by slow completion rates, clogging of administrative and supervisory resources occur when postgraduates remain in the system for longer than expected. Finally the postgraduates themselves don't want to prolong their registration time: one laments "We are at a stage in our lives when many of our peers who chose to work are buying houses and cars, while those of us … [studying] are constantly anxious about our funding and that we continue to be a financial burden on our parents … aside from the difficulties of raising a family and saving for retirement" (ASSAf 2010).

Despite the many changes occurring in the postgraduate research landscape, the rate of completion of master's and doctoral candidates remains a global problem (Ehrenberg et al. 2010; Cloete et al. 2015). Desired South African completion rates for a full-time PhD is 2 years (part time 4 years) and 1 year for a full-time master's (2 years part time). However actual completion rates are far from ideal: the average PhD completion rate after 7 years is 48% (Cloete et al. 2015), and 50% of full-time master's students take just over 2 years to complete. While completion rates and attrition of postgraduate students are a universal challenge, direct comparisons with South Africa are restricted due to influences such as discipline of study, part or full time, gender, race, or age variables and national program structure and study time intervals.

Traditionally the relationship between students and supervisors has been regarded as the most important element to ensuring a successful, speedy, and efficient master's or doctoral candidacy (Grant 2003; Brill et al. 2014; Kemp et al. 2014). Thus in the global move to shorten completion rate, supervisors are pressurized and incentivized to meet this goal. South Africa has not escaped such coercion, and a light will be cast in this corner of supervisory practice in the following section.

Supervision

In South Africa, four supervisory models occur, with an overriding assumption that supervisors are best placed to offer guidance (van der Meer et al. 2013). In all cases, it is the formally appointed supervisors who are responsible for the educational and administrative path of the student. (1) The traditional model where the PRS works individually and intensely with a supervisor who guides them in their research. (2) The committee or panel approach with between three and five qualified academics, all formally appointed, supervise the PRS. The committee members are selected on the basis of the research field being investigated and expertise required. (3) Physical sciences favor the "laboratory model" where groups of research students, under one supervisor, work together on a common project. The supervisor leads the group, which could include any number of academics, researchers, postdoctoral students, technicians, and laboratory assistants (Kemp et al. 2014; Cotterall 2011). In this setting, the PRSs tend to turn to more senior students or others in the group for assistance rather than look primarily to the supervisor for advice, thereby supporting each other in the process. In recent years, the "laboratory model" has been adapted for the "soft" disciplines, such as the humanities, into the cohort model of supervision to gainfully benefit from that community of practice. (4) The cohort model is described as consisting of a number of "purposefully grouped students entering and pursuing a programme of study together, characterised by social and cultural processes, shared experiences and interactions, collective efforts, and mutual commitment to an educational goal" (Govender and Dhunpath 2013). Contrary to the other supervisory models, cohorts vary widely in formality, number of supervisors, lifespan, disciplinarity, and curriculum style (Lai 2011; van Biljon and de Villiers 2013; Kemp et al. 2014). Added to the above four models is a co-supervisory option which can be used in many configurations to supply any number of supervisory and student needs (Grossman and Crowther 2015).

What would be the workload attached to each model? Efficiencies of scale dominate the potential and effectiveness of laboratory, cohort, and panel/committee supervision and can be wasteful when roles within the team are not clarified (Grossman and Crowther 2015). Except for the "laboratory model," the other three systems appear rather demanding of labor and time. The panel model with three to five supervisors attending to one PRS seems as time-consuming as the one-on-one traditional model, while cohorts are hard to assess efficiency-wise, having varying staff-student ratios which can be a "one-to-many" or a "many- to-many" relationship (van Biljon and de Villiers 2013). As regards any difference between the models, Louw and Muller (2014) opine "We are ... nudged in the direction ... that there is no such thing as an alternative supervisory model. What is in place would better be described as a set of commonsense and rather ad hoc technical adjustments that more often than not undercut their own purposes. And insofar as [supervisory] models are constructed and compared, the models themselves show no appreciable differences at all." From Buttery et al. (2005) comes the exclamation "the efficacy of various models of supervision is not overwhelming despite the significance of the subject." Both these views highlight perturbing "academic heartland" realities in the current quest to improve PRS throughputs.

There are two reasons why the one-on-one traditional model of supervision dominates the tertiary postgraduate supervision scenario (Grant 2003; Stracke 2010; Cotterall 2011; Pyhältö et al. 2012).

The primary influence shaping a supervisor's style is their own supervision experience. Most current South African supervisors were supervised in the traditional way, thereby perpetuating that style, and once a style is set, supervisors rarely change their approach (Cotterall 2011; Louw and Godsell 2015). Secondly and importantly are the incentives linked to postgraduate supervision which favor single supervision. So no matter the radical shift in the tertiary research environment, with increasing numbers and increasingly diverse students, supervisors will pragmatically favor practices which "work for them" and/or bring in the most NPM incentive monies. This is despite the fact that "Demands for satisfactory performance coupled to increased productivity, as well as an effective reduction in staff numbers because of the economic downturn, have made the traditional model increasingly unsustainable" (Louw and Muller 2014) and "it is evident that the traditional apprenticeship model [of supervision] may not be an efficient approach for the purpose of rapidly increasing the production of doctoral graduates in South Africa" (ASSAf 2010). Pertinently, Govender and Dhunpath (2013) voice the danger of imposing team supervision on academics who are accustomed to supervising alone.

The failure of transformation policies to come up with any viable alternative to the traditional supervisor-student dyad seems to be a major shortfall in NPM thinking. This is in contrast to undergraduate study, where massification and diversity has been better dealt with. Neoliberal undergraduate students are more likely to study in any number of multiple settings such as large lecture theaters, in groups on collaborative exercises, with online tutorials and using a range of technologies and less likely to spend significant time in small group tutorials or have one-to-one consultation with their lecturers (McInnis 2005). It is not surprising therefore that a tension has arisen within the academic supervisory body, between a preference for traditional supervision and optimal incentivization on the one hand and the massified PRS throughputs demanded by university administrators on the other.

Even if the most dedicated and conscientious supervisor would like to give their PRSs the best research experience possible, workplace realities dictate otherwise. Heavy academic and clinical (in the health sciences) workloads, ever-increasing numbers of committee meetings, and unprecedented administrative duties (Habib and Morrow 2007; ASSAf 2010; Grossman and Crowther 2015; Wright 2016) hinder the sustained and productive face-to-face interaction required for PRS development. Indeed one third of South African supervisors feel they currently do not give sufficient time to their students (Cloete et al. 2015) with Australian doctoral students reporting less productive supervisory contact compared with their experience in honors and master's years (Neumann 2007). Reduced contact time greatly affects students' perceptions of their supervisory experience (Cotterall 2011) with direct research-related help the biggest perceived shortfall between students' expectations of supervision and their experiences. Unsurprisingly, Wingfield (2012) pleads for relief from administrative tasks to optimally dedicate time to the education of

postgraduate students, while workload demands increasingly narrow scope of practice, negatively impacting on the *supervisor's* own supervisory experience. Cohort supervision meetings often take place on weekends (Harrison 2009; Govender and Dhunpath 2013) to cater for part-time working students while "catch-up" work such as draft correction occurs in the small hours of the morning (Spear 2000) to meet the turnaround draft deadlines expected within the consumer-conscious, neoliberal, academics system. No wonder Wingfield (2012) felt pressed to record that successful academic work way more than the official 40-h week, the implication being that academic time now swallows up private and family time. Grant (2003) was prescient when observing "the complex and potentially fraught pedagogy of supervision may not be withstanding these pressures [student market, funding, diminishing government support] particularly well." Thus our PRS hurries across the quadrangle with the thought "I don't want to bother my supervisor, he's so busy."

Despite time factors reducing supervisor accessibility, previously PRSs could confidently turn to their supervisors for all aspects of their research. Now things are rather different. The supervision process, when supervising students in one's own area of expertise, is fairly straightforward. However, transformation-allied departmental restructuring has forced Australian supervisors to supervise outside their field due to vanished (retrenched) expertise (Neumann 2007). Mode 2 knowledge production has become so diverse that supervisors often cannot give assistance or don't know who to call upon if their networks do not stretch in that direction. Finally as mentioned before, many South African clinically oriented MMed/MDent PRSs are of necessity supervised by non-clinicians as a short-term measure until such time that clinically qualified supervisors come on stream. Thus, it is unsurprising that 45% of surveyed South African supervisors admit to supervising outside their area of expertise (Cloete et al. 2015).

Expertise is not limited to the field of study. Supervisors cannot be masters of all attributes required for postgraduate study: a case in point being academic writing which needs skill and focused attention during writing-up, a stage notorious for prolonging PRS registration (Grossman 2016). Academic writing is a challenging, complicated combination of tasks requiring a multiplicity of skills which must be utilized at various times and in different orientations throughout the process (Murray and Moore 2006). This is especially testing for supervisors who are nonnative English speakers which is increasingly the norm in South Africa. Undoubtedly many supervisors have writing skills but may be inarticulate in conveying writing concepts: Cotterall (2011) uses an example of a student advised to include "beautiful words" in a journal article. Inarticulation and poor conveyance of concepts are not limited to writing. In other areas of research procedures, the quality of the PRS apprenticeship is affected when supervisors lack skill in articulating their knowledge (Cotterall 2011; Carter and Kumar 2016) or actually lack required knowledge.

Universities are aware that supervisor barriers are a rate-limiting step to optimally achieve PRS-generated research subsidies. Therefore, they have cast around for alternatives to additionally support postgraduates and ensure quality graduates. One solution is official training courses as an adjunct to shrinking supervisory contact time.

Training

Universities have introduced formal initiatives to speed up graduation times by supplying courses and training workshops among others. In doing so, they simultaneously deal with NPM accountability requirements, PRS massification demands, language problems of a diverse PRS body and, in theory, relieve the time-consuming supervisor-PRS interaction required during candidacy. Typically such courses, if available, cover different research methodologies, statistics, how to compose a literature review, preparing a research proposal and thesis writing. Libraries might offer information searching skills, while writing is supported through a dedicated writing support facility, writing courses, and writing retreats. While these initiatives are suitable for some, they fall short for others. Centrally located university and faculty support facilities and courses are often deemed as too generic or too discipline based to meet the diverse and complex needs for all students and do not cover the full gamut of PRS research and writing problems (Rosales et al. 2012; van der Meer et al. 2013). Discontented rumblings are apparent from the student body about such routinization and commodification of teaching and learning, the introduction of which has ironically been set in place to accommodate their growing numbers. An engineering student sniffed ". . .there is only so much you can get from a class. You won't find a class to help you do research. It's very difficult, it's very specific . . ." (Gardner 2010). Ehrenburg et al. (2010) report that students in a large-scale PhD education study in the USA requested "informal" workshops to assist them progress toward their degree, rather than additional formal "mentoring" per se. Generation Y PhD students in the UK (Carpenter et al. 2012) considered generic training content ineffective if not tailored to their individual subject areas or needs. They preferred frequent, regular, face-to-face support and training via informal providers, specific to their field. Whether this groundswell toward informal, face-to-face, appropriate learning arrangements is a reaction against the increasing corporatization of higher education is not known, but the coincidence is there.

Thus the emergence of peer groups as a support network has been hailed as a remedy for research learning and speedy degree completion.

Informal Learning Spaces

Postgraduates find it easier to seek advice from peers because they are supportive and non-judgmental. Peer support, as an informal support activity, has been well studied and shown to assist postgraduates counter feelings of isolation (Bell et al. 2013); encourage face-to-face contact (Steele et al. 2012); elevate writing and confidence boosting (Rosales et al. 2012), maintain momentum within a low-stakes forum to present their critical arguments and feedback strategies (Stracke and Kumar 2014), and so on. In addition, such informal gatherings provide opportunities for building networks and supplement competencies within the group (Pyhältö et al. 2012). Indeed Pyhältö urges students to form their own support groups and networks using "semi-planned events, such as social gatherings and professional development opportunities" for this purpose. Peer groups

have undoubtedly proved their role in PRS support but are not seen by all as a panacea to speedy PRSs graduation. Some supervisors regard any group which does not appear to be moving students directly toward the main game of thesis completion as a distraction or obstructionist (Devenish et al. 2009; van der Meer et al. 2013). Such attitudes illustrate the extent to which throughput mindsets have filtered down to the supervisor who perceives the student's timely completion of the project as the central priority, limiting exposure to disciplinary research culture (Cotterall 2011; van der Meer et al. 2013).

Whereas peer groups are traditionally regarded as a group of postgraduate students meeting under largely social circumstances with some academic inputs pertinent to their research degrees, researchers mainly from the antipodes have become increasingly aware that with greater academic staff involvement, peer groups can serve as alternative research-related spaces (ARRS) for learning and optimum degree completion. For example, Cotterall (2011) identified that while research learning opportunities in student-initiated writing and reading groups were created, they failed to offer critical feedback at a level which staff attendance could provide. Furthermore, within a research laboratory context "students experienced a lot of stress in trying to make things work since they were left on their own trying to teach each other . . . because the supervisors had become managers" (McAlpine and Amundsen 2015). While self-learning is to be encouraged, the timelines that such learning requires sit uneasily within desired NPM completion rates. This has led to yet a third development in informal learning where concerned academics provide direct research-related help and support as an alternative learning PRS space. The motivation behind providing such help is the perception that neoliberal university-allocated resources are inadequate to assist with PhD production and research, prompting individuals to initiate supportive pedagogic activities (Louw and Godsell 2015). As with peer groups, such support can disappear very quickly because it is not part of the university system. Thus a better understanding of ARRS academic participation is under investigation on a number of fronts and has only recently been afforded critical space in academic literature.

It is helpful at this point to visualize ARRS as informal learning spaces on a continuum with many permutations catering for all manner of PRS research and/or supervisory needs along its length. At the one end of the continuum lies the largely social peer group, made up of exclusively PRSs with no academic staff involvement. At the other end of the continuum is an intensively run, goal-directed alternative research learning space (DARLS) aimed at increasing postgraduate throughput, maintaining quality research and providing supervisory skills. In this latter case, there is strong academic staff involvement, supplying PRS support in the fashion they want: credible, informal, readily available, one on one or small groups, face to face, tailored, and specific to their field and need. In between, there could be any number of different staff-student arrangements catering for a variety of peer group and academic needs.

From the above, it can be seen that an array of settings, structures, and pursuits for informal learning spaces means an expansive range of names for this activity (Steele et al. 2012; Stracke and Kumar 2014; Batty 2016). ARRS can be interdisciplinary or discipline specific (Buissink-Smith et al. 2013). They are seen to complement the supervisor-student relationship, not to replace it (Steele et al. 2012; Stracke and

Kumar 2014) although Grossman (2016) suggests DARLS can serve to *supply* eroding supervisory skills. What such groups have in common is that they meet on a regular basis, function outside the formal degree components such as supervision and mandatory study units, and are not institutionally regulated. Being personality and leader driven, ARRS tend to collapse when the driver leaves, thereby mirroring the transience of the PRS/staff population and the informal nature of the activity (Bell et al. 2013; Louw and Godsell 2015; Grossman 2016). Transience does not imply a short lifespan. In Australia, Batty's (2016) HELP group for screen production research is still running 4 years on, and at the time of publication, Devenish et al.'s (2009) business administration group was 8 years in the making. The South African experience of PaperHeaDs was a 10-year support group of education-based, part-time PhD candidates (Harrison 2009).

Most such groups develop in a "bottom-up" manner from a relatively spontaneous grouping of peers within a particular program of study. In different contexts, Buissink-Smith et al. (2013), Batty (2016), and Grossman (2016) have demonstrated that such groupings can be successfully "manufactured" in a top-down manner by overtly providing institutional support to PRSs or being initiated by an academic. Given the multiplicity of functions, Buissink-Smith et al. (2013) have come to the conclusion that there is no one "right" formula to establishing an ARRS and that the only common denominator is their informality. Recent publications have highlighted the positive role which ARRS have on PRS support in distance learning (Lai 2011), applied linguistics (Stracke 2010), engineering (Rosales et al. 2012), criminal law (Steele et al. 2012), screen production (Batty 2016), health science (Kemp et al. 2014; Grossman 2016), and so on.

Without question, informal teaching occurs in every corner of academe, but because it takes place behind a veil of institutional strategic silence (Devenish 2009), the full potential has not been realized nor recognized. The very nature of an ARRS through its informality makes it difficult to estimate the precise contribution ARRS have on PRS throughput. ARRS have no regulatory course codes to measure teaching inputs; the activities are not included in FTEs (full-time teaching equivalents); the hours expended are not calculated in workload assessments, and contact time is neither assigned to nor factored against supervisor-postgraduate student ratios. Literature shows this activity has direct throughput benefits (Grossman 2016), but as yet the full effect of ARRS on PRS completion rates and quality graduates is unknown. Any form of ARRS could provide a workable solution to the intractable tensions between the numbers of values and goals arising in South African PRS education environments. Therefore, they are deserving of greater scrutiny and future research as a means of providing supportive postgraduate learning.

Formalizing ARRS?

Should universities formalize ARRS? Literature does not give a simple yea or nay on the matter with several opinions from a number of perspectives. Steele et al. (2012) place the success or otherwise of formal ARRS recognition firmly

within the institutional camp. Should institution vision be narrow, ARRS might never achieve their maximum potential. Should the vision be broad, ARRS could serve as a catalyst for rethinking postgraduate research education. Harrison (2009) feels that normative educational frames will govern what happens when an ARRS is set up within university structures, to the detriment of spontaneous learning. Bell et al. (2013) warn obliquely of the "muting effect" of supervisor involvement should they participate in ARRS structures. McInnis (2005) grumbles that academic decision-making is now the province of executives and managers, no longer professors and senior academics, thereby compromising long-held trusts in academic freedom, good teaching, and quality learning. In establishing ARRS, such a trust can be reclaimed. From the student's point of view, an officially supported and institutionally "open" ARRS confers stability preventing a helpful activity from floundering and premature collapse (Buissink-Smith et al. 2013). So the jury is out on the question of formalizing ARRS.

Taking Stock

Profound changes within tertiary education over the past few decades has exerted increasing pressures on the supervisor-student dyad and led to the establishment of ARRS to compensate for weakening supervisor inputs. Neumann (2007) has pointed to the swift and very powerful effect that government policy can have on core processes of academic work and the student research experience. With policy change comes numerous competing political and educational issues destabilizing national higher education transformation trajectories as described by Bleiklie and Henkel (2005). Finally, the extensive time lags between interventions and their effects, which in the case of doctoral education can run a decade or longer, have meant that it is only now possible to evaluate the outcomes of academic change and the tangible effects on postgraduate education (Ehrenberg et al. 2010). Indeed, the change has been so inexorable within the health sciences that it has left many such as Wright (2016) shouldering a "knapsack of challenges with which a mixed legacy of decision-making, good and bad, has landed [universities]." It is only now, some decades on, that a fuller understanding of the cascade of events affecting postgraduate research education can be fully understood. As we step back and watch our hurrying PRS, anxiously seeking answers, it is perhaps time to unpack Wright's knapsack and refocus on the decision-making which has affected *her* personal development to independent agency and *her* path to impending knowledge work and *her* contribution to future national economic supremacy. Up till now, other transformation stakeholders have been the focus of NPM concerns. It is exigent to explore, without delay, all viable alternatives to assist our PRS to obtain the best research experiences possible given the weakening supervisor bond. Alternative research-related spaces seem to fit the required bill.

References

ASSAf. 2010. *The PhD study.* Pretoria: Academy of Science in South Africa.

Batty, C. 2016. Collaboration, critique and a community of peers: The benefits of peer learning groups for screen production research degrees. *Studies in Australasian Cinema*. https://doi.org/10.1080/17503175.2015.1133261.

Bell, F., R. Shackel, and L. Steele. 2013. The books don't talk to me!: Postgraduate student groups and research student identity formation. Paper presented at the 36th HERDSA Annual International Conference, Auckland, New Zealand 1–4 July, 2013.

Bleiklie, I., and M. Henkel. 2005. Introduction. In *Governing knowledge: A study of continuity and change in higher education*, ed. Ivar Bleiklie and Mary Henkel, 1–10. The Netherlands: Springer. https://www.researchgate.net/profile/Ulrich_Teichler/publication/226682448_New_Patterns_of_Diversity_in_Higher_Education_Towards_a_Convergent_Knowledge/links/542ea0030cf29bbc126f385d.pdf. Accessed 23 Mar 2016.

Brill, J.L., K.K. Balcanoff, D. Land, M.M. Gogarty, and F. Turner. 2014. Best practices in doctoral retention: Mentoring. *Higher Learning Research Communications* 4: 26–37. https://doi.org/10.18870/hlrc.v2i2.66. Accessed 12 Apr 2016.

British Council. 2014. *Can higher education solve Africa's job crisis? Understanding graduate employability in Sub-Saharan*. Going Global: Africa. http://www.britishcouncil.org/sites/britishcouncil.uk2/files/graduate_employability_in_ssa_final-web.pdf. Accessed 17 Aug 2015.

Buissink-Smith, N., S. Hart, and J. van der Meer. 2013. There are other people out there! Successful postgraduate peer groups and research communities at a New Zealand university. *Higher Education Research and Development* 32: 695–705. https://doi.org/10.1080/07294360.2013.777034. Accessed 15 Aug 2014.

Buttery, E.A., E.M. Richter, and W.L. Filho. 2005. An overview of the elements that influence efficiency in postgraduate supervisory practice arrangements. *International Journal of Educational Management* 19: 7–16.

Carpenter, J., L. Wetheridge, and S Tanner. 2012. Researchers of tomorrow: The research behaviour of Generation Y doctoral students. http://www.jisc.ac.uk/media/documents/publications/reports/2012/Researchers-ofTomorrow.pdf. Accessed 12 Jul 2014.

Carter, S., and V. Kumar. 2016. Ignoring me is part of learning: Supervisory feedback on doctoral writing. *Innovations in Education and Teaching International.* https://doi.org/10.1080/14703297.2015.1123104.

CHE. 2015. *VitalStats. Public higher education 2013*. Pretoria: Council on Higher Education. http://www.che.ac.za/sites/default/files/publications/Vital%20Stats%202013_web_0.pdf. Accessed 9 Mar 2016.

Cloete N. 2016. For sustainable funding and fees, the undergraduate system in South Africa must be restructured. *South African Journal of Science* 112: Art. #a0146, 5 pages. https://doi.org/10.17159/sajs.2016/a0146.

Cloete, N., J. Mouton, and C. Sheppard. 2015. Doctoral education in South Africa. http://www.africanminds.co.za/wp-content/uploads/2015/11/Doctoral-Education-in-South-Africa-WEB.pdf.Accessed 5 Dec 2015.

Cotterall S. 2011. Stories within stories: A narrative study of six international PhD researchers' experiences of doctoral learning in Australia. PhD. Macquarie University, Sydney. https://www.researchonline.mq.edu.au/vital/access/services/Download/mq:31277/SOURCE1. Accessed 12 Apr 2016.

Cullen, D., M. Pearson, L.J. Saha, and R.H. Spear. 1994. *Establishing effective PhD supervision*. Canberra: Australian Government Publishing Service. https://www.researchgate.net/publication/262025634_Establishing_Effective_PhD_Supervision. Accessed 10 May 2016.

Devenish, R., S. Dyer, T. Jefferson, L. Lord, S. Van Leeuwen, and V. Fazakerley. 2009. Peer to peer support: The disappearing work in the doctoral student experience. *Higher Education Research and Development* 28: 59–70. https://doi.org/10.1080/07294360802444362.

Ehrenberg, R.G., H. Zuckerman, J.A. Groen, and S.M. Brucker. 2010. *Educating scholars: Doctoral education in the humanities*. Princeton: Princeton University Press.

Gardner, S.K. 2010. Contrasting the socialization experiences of doctoral students in high- and low-completing departments: A qualitative analysis of disciplinary contexts at one institution. *The Journal of Higher Education* 81: 61–81. http://www.jstor.org/stable/27750766. Accessed 13 Apr 2016.

Govender, K., and R. Dhunpath. 2013. Harmony and conflict in a PhD cohort supervision model. *Alternation* 9: 219–247. http://alternation.ukzn.ac.za. Accessed 30 Mar 2016.

Grant, B. 2003. Mapping the pleasures and risks of supervision. *Discourse: Studies in the cultural politics of education* 24: 175–190.

Grossman, E.S. 2016. "My supervisor is so busy. . ." Informal spaces for postgraduate learning in the Health Sciences. *South African Journal of Higher Education* 30: 94–109. https://doi.org/10.20853/30-2-643.

Grossman, E.S., and N.J. Crowther. 2015. Co-supervision: Ensuring the right hand knows what the left hand is doing. *South African Journal of Science* 111: 1–8. https://doi.org/10.17159/sajs.2015/20140305. Art. #2014-0305, 8 pages.

Habib, A., and S. Morrow. 2007. Research, research productivity and the state in South Africa. *Journal of Higher Education in Africa* 5: 113–130.

Harrison, J.E. 2009. Developing a doctoral identity – a narrative study in an autoethnographic frame. PhD. University of KwaZulu-Natal. http://researchspace.ukzn.ac.za/handle/10413/767. Accessed 20 Apr 2016.

Kemp, M.W., B.M. Lazarus, G.G. Perron, W.P. Hanage, and E. Chapman. 2014. Biomedical Ph.D. students enrolled in two elite universities in the United Kingdom and the United States report adopting multiple learning relationships. *PLoS One* 9: e103075. https://doi.org/10.1371/journal.pone.0103075.

Lai, K-W. 2011. Using collaborative peer feedback and supervision to support doctoral research at a distance. In *Changing demands, changing directions*. Proceedings ascilite eds. G. Williams, P. Statham, N. Brown and B. Cleland. Hobart. 747–757. http://www.ascilite.org.au/conferences/hobart11/procs/Lai-full.pdf.

Louw, J., and G. Godsell. 2015. Multiple paths to success. In *Doctoral Education in South Africa*, ed. N. Cloete, J. Mouton, and C. Sheppard. Cape Town: African Minds. http://www.africanminds.co.za/wp-content/uploads/2015/11/Doctoral-Education-in-South-Africa-WEB.pdf. Accessed 5 Dec 2015.

Louw, J., and J. Muller. 2014. *Literature review on models of the PhD*. Cape Town: CHET. http://www.chet.org.za/papers/literature-review-models-phd. Accessed 9 Dec 2015.

Mantai, L., and R. Dowling. 2015. Supporting the PhD journey: Insights from acknowledgements. *International Journal for Researcher Development* 6: 106–121. https://doi.org/10.1108/IJRD-03-2015-0007.

McAlpine, L., and C. Amundsen. 2015. Early career researcher challenges: Substantive and methods-based insights. *Studies in Continuing Education* 37: 1–17. https://doi.org/10.1080/0158037X.2014.967344.

McInnis, C. 2005. The governance and management of student learning in universities. In *Governing knowledge: A study of continuity and change in higher education*, ed. Ivar Bleiklie and Mary Henkel, 81–96. Dordrecht: Springer. https://www.researchgate.net/profile/Ulrich_Teichler/publication/226682448_New_Patterns_of_Diversity_in_Higher_Education_Towards_a_Convergent_Knowledge/links/542ea0030cf29bbc126f385d.pdf. Accessed 23 Mar 2016.

van der Meer, J., L. Spowart, and S. Hart. 2013. We need support too: Providing postgraduate peer support. In *The student engagement handbook: Practice in higher education*, ed. E. Dunne, 313–330. UK: Emerald Group Publishing Limited.

Murray, R., and S. Moore. 2006. *The Handbook of Academic Writing. A Fresh Approach*. England, Open University Press, McGraw-Hill.

Neumann, R. 2007. Policy and practice in doctoral education. *Studies in Higher Education* 32: 459–473. https://www.researchgate.net/publication/263602460_Policy_and_practice_in_doctoral_education.

Patel, N., P. Naidoo, M. Smith, J. Loveland, T. Govender, and J. Klopper. 2016. South African registrar perceptions of the research project component in training: Hope for the future? *South African Medical Journal* 106: 169–171. https://doi.org/10.7196/SAMJ.2016.v106i2.10310.

Pyhältö, K., A.R. Nummenmaa, T. Soini, J. Stubb, and K. Lonka. 2012. Research on scholarly communities and the development of scholarly identity in Finnish doctoral education. In *Higher education research in Finland: Emerging structures and contemporary issues*, ed. S. Ahola and D.M. Hoffman, 337–357. Jyväskylä Finland: Jyväskylä University Press. https://jyx.jyu.fi/dspace/bitstream/handle/123456789/42356/978-951-39-5189-4.pdf?sequence=1. Accessed 29 Jan 2015.

Rhoades, G. 2005. Distinctive local continuities amidst similar neo-liberal changes: The comparative importance of the particular. In *Governing knowledge: A study of continuity and change in higher education*, ed. Ivar Bleiklie and Mary Henkel, 11–30. Dordrecht: Springer. https://www.researchgate.net/profile/Ulrich_Teichler/publication/226682448_New_Patterns_of_Diversity_in_Higher_Education_Towards_a_Convergent_Knowledge/links/542ea0030cf29bbc126f385d.pdf. Accessed 23 Mar 2016.

Rosales, J., C. Moloney, C. Badenhorst, J. Dyer, and M. Murray. 2012. Breaking the barriers of research writing: rethinking pedagogy for engineering graduate research. Proceedings. Canadian Engineering Education Association (CEEA12) Conference, Winnipeg. 17–20 June. Paper 042: 1–8. https://ceea.ca/images/content/ceea12-proc-complete-v35s.pdf. Accessed 17 Mar 2016.

Spear, R.H. 2000. Research supervision of research students: Responding to student expectations. ANU occasional paper. no.GS00/1. https://digitalcollections.anu.edu.au/bitstream/1885/41534/2/GS00_1.pdf. Accessed 28 Apr 2016.

Steele, L., R. Shackel, and F. Bell. 2012. The importance of the local in a global age: analysis of networking strategies in postgraduate law research learning. *Journal of the Australasian Law Teachers Association* 5: 1–13. http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1161&context=lhapapers. Accessed 3 Mar 2015.

Stracke E. 2010. Undertaking the journey together: Peer learning for a successful and enjoyable PhD experience. *Journal of University Teaching & Learning Practice* 7: http://ro.uow.edu.au/jutlp/vol7/iss1/8. Accessed 17 Jan 2015.

Stracke, E., and V. Kumar. 2014. Realising graduate attributes in the research degree: The role of peer support groups. *Teaching in Higher Education* 19: 616–629. https://doi.org/10.1080/13562517.2014.901955. Accessed 16 Jan 2015.

van Biljon, J.A., and R.M. de Villiers. 2013. Multiplicity in supervision models: The supervisor's perspective. *South African Journal of Higher Education* 27: 1443–1463.

van der Walt, L., C. Bolsmann, B. Johnson, and L. Martin. 2002. Globalisation and the Outsourced University in South Africa: The restructuring of the support services in public sector universities South Africa, 1994–2001. Final report for CHET, July 2002. http://www.chet.org.za/files/VAN%20DER%20WALT%20ET%20AL%202002%20Globalisation%20Outsourced%20University.pdf. Accessed 18 Apr 2016.

Wingfield, B. 2012. How much time does it take to supervise a PhD student? *South African Journal of Science* 108: 11–12. https://doi.org/10.4102/sajs.v108i11/12.1454. Art. #1454, 2 pages.

Wright, L. 2016. Brave old world: Can today's university truly be 'home' to tomorrow's minds? *South African Journal of Science* 112. https://doi.org/10.17159/sajs.2016/a0136. Art. #a0136, 2 pages.

5 Enabling Innovative Postgraduate Research: Critical Foresight and Strategic Considerations for University Leaders

Luke van der Laan and Jenny Ostini

Contents

Abstract

Innovative postgraduate research is an outcome that requires necessary preconditions to flourish in the higher education system. Neither the system underpinning postgraduate research nor the students themselves can make this happen. Rather, the worldviews and assumptions of leaders as decision-makers, who continually build, amend, and deconstruct higher education systems, are critical precursors to nurturing innovative postgraduate research.

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There is almost universal agreement that universities are vital in shaping global, national, and local futures. The impact of universities is broader than their traditional remit and encompasses a full diversity of ecological, social, and economic outcomes.

Universities have a pivotal role in achieving a shift from traditional sources of wealth to new service models, radical innovation, and small and medium enterprise development.

Disruptions faced by society are also disrupting traditionally "slow to change" university institutions. This challenges university leadership. While many still regard the world as thriving in the information age, it has been suggested that we have already transitioned into a new age, the conceptual age. Universities will need to address this shift to economies dependent on conceptual workers through their education model(s).

A new profile of university leadership is rapidly emerging to enable the emergence of innovative postgraduate studies to meet the need of the conceptual age through initiatives such as embodied in "third-generation postgraduate studies". The necessary paradigms needed by university leaders are outlined for this important aspect of higher education engagement to flourish to the benefit of innovation, the economy, and ultimately societies.

Keywords
Innovation · Postgraduate research · Postnormal · Higher education · Universities · Knowledge · Work · Leadership

Introduction

Innovative postgraduate research is an outcome. It is not a means in itself. It requires necessary preconditions to flourish in the higher education system (if that is to be a goal of the sector). Neither the current system underpinning postgraduate research nor the students themselves can make innovation endemic. Rather, the worldviews and assumptions of leaders as decision-makers, who over time build, amend, and deconstruct higher education systems, are critical precursors to nurturing innovative postgraduate research.

The link between universities and human providence and prosperity is richly evidenced throughout recorded history. There is no lack of agreement that universities are fundamentally important to the overall progress and development of a nation (Savior and Cooper 2015) and indeed are a collective barometer of global human progress as a result of innovation. They are vital in shaping global, national, and local futures. In addition to the traditional attributes of education and research associated with the purpose of universities, the impact of universities is broad and encompasses a full diversity of ecological, social, and economic outcomes (van der Laan and Erwee 2013).

Traditional sources of wealth such as natural resources, heavy manufacturing, and agriculture are faced with increased competition and disruption. As a result, national

priorities in both developed and developing economies have shifted to filling a looming economic vacuum by prioritizing new service models, radical innovation, and small and medium enterprise development. Most governments realize that the "vigor and dynamism of local economies depend ... on innovating successfully" (Lester 2005). It is therefore logical to expect universities to play a pivotal role in achieving this high-priority change.

Universities are linked to innovation. Many would argue that universities are by their very nature producers of innovation and have a strong track record in this regard. While this may be true, the following questions remain:

(a) Given the global emphasis on innovation, is innovative research from universities endemic or ad hoc in meeting this national and global agenda?
(b) What is the predominant source of innovation in universities?
(c) Is postgraduate research delivering on innovation, or is it mostly typified by a focus on incrementally better scholarship?

While these questions require further research, postgraduate research offerings are largely still embedded in traditional paradigms related to quality of scholarship (rather than research impact), and their host institutions have been slow to adjust to change (Lester 2005). Further, innovative research in universities is predominantly emerging out of well-funded research initiatives as opposed to whole-of-university integrated strategies aimed at producing innovation from research. As such, postgraduate research programs have generally been slow to adjust and have not kept up with the priorities typifying the twenty-first century.

Change has changed (Hamel 2009) and times are "postnormal" (Sardar 2015). The disruption being faced by society is also being faced by university institutions, many of which are monolithic and typically "slow to change" (Davis 2006). This presents a challenge to leadership and is likely to demand unprecedented levels of capabilities in leadership in order to make timely adjustments and deliver on national priorities relevant to the higher education sector.

While many still regard the world as thriving in the information age, it has been suggested that humanity has already transitioned into a new age, the conceptual age (European Foundation of Management Development (EFMD) 2012). This suggests that the shortest "age" of humanity which was typified by the emergence of the knowledge worker has been replaced by a time where economies have become more dependent on the conceptual worker. This shift is evidenced by governmental targets for the number of adults qualified at above level 4 tertiary level almost doubling to 40% of the total workforce (Leitch 2006).

The need for universities to structurally and intellectually adjust is also strongly influenced by the needs of the workforce, and the rapidly diversifying national targets focused on higher skills reflect this. While many universities still question whether skills preparation for the workforce is their mission, the workforce itself demands higher-level education focused on developing conceptual abilities. Professionals recognize that the nature of knowledge and work has shifted dramatically (EFMD 2012). They are increasingly called upon to develop the cognitive skills

typically associated with postgraduate education or face irrelevance in their professional practice. This has led to a dramatic increase in demand for "fit-for-future" postgraduate programs that develop higher-order capabilities.

Postgraduate education has always been important to universities for a number of reasons but primarily in the area of research and/or professional development. The emergence of professional doctorates presented universities with a unique challenge: how to translate the advanced practice needs of professionals into postgraduate programs. The result was mostly more advanced theoretical knowledge and case studies with a minor research component. Building on these professional degrees, a "third-generation" postgraduate research approach has emerged focused on critical reflective practice and cognitive development enabled by research conducted in professional practice (Wildy et al. 2015).

A new profile of university leadership is rapidly emerging to enable the emergence of innovative postgraduate studies that meet these changing needs. Leaders must recognize that governmental and workforce demands for higher education collaboration have doubled domestically. Yet governments and industry are increasingly frustrated by the lack of alignment with universities (Bstieler et al. 2015; Kneller et al. 2014). Industry needs and expectations, especially in regard to innovation and developing research with impact, have dramatically increased tensions in what should be productive and mutually beneficial relationships. At the heart of the challenges are university leaders' continued long-held assumptions underpinned by traditional university dogma (Leitch 2006).

The notion of "third-generation postgraduate studies" may address these issues (Wildy et al. 2015). This chapter describes an evidenced form of such programs and defines their underlying principles and rationale. Challenges and tensions arising from adopting such programs are explored. Paradigms are identified that need to be embraced by university leadership. This is critical to allow higher education to avoid becoming redundant in their mission to contribute to the advancement of communities, work, innovation, the economy, and ultimately society.

Purpose

There is a proposed association between university innovation outcomes, postgraduate research offerings, the flux of current times and the challenges facing university leadership. The majority of university innovation outcomes are those that are funded and generally not a product of postgraduate research (Lester 2005). Yet postgraduate research programs could focus their efforts on initiatives to make innovation more endemic in postgraduate offerings rather than its current ad hoc occurrence.

A report from Massachusetts Institute of Technology (MIT) highlights the notion that knowledge is "global but learning is local" (Lester 2005). Within the context of how universities could prosper as "engine rooms of innovation", it is imperative that leadership enables the capability to lead change and facilitate innovation (Krahe and Fitzgerald 2015). Krahe and Fitzgerald's study, *innovation studio 101*, highlights that it is possible to facilitate innovation within existing systems in higher education

by situating the initiative at the intersection of career development and innovation theory (Krahe and Fitzgerald 2015). This is a key indication of how innovation can be stimulated in postgraduate research. The answer may lie in what are being termed "third-generation" postgraduate research programs.

Within the current paradigms of university leadership, the notion of more contemporary forms of innovative postgraduate research is still rare. Progress has been incremental at the most and largely individually inspired rather than systemically endemic. The relationship between postgraduate programs and university innovation within the context of rapid change and dominant paradigms in current university leadership will be explored here with particular emphasis on the notion of "third-generation" postgraduate research programs. Essential leadership characteristics for enabling such programs to deliver endemic innovation as a key feature of their institution's postgraduate offerings are proposed.

Postnormal Times (PNT) and the Emergence of the Conceptual Age

Increasingly, much of the environment around us is typified by unprecedented changes. Nothing seems continuous: technology, politics, the economy, the weather, and communities we live in, all seem to be experiencing dramatic and fast-paced change. Sardar (2010) describes this time as "postnormal" typified as a transitional period characterized by complexity, chaos, and contradictions. Postnormal times (PNT) theory has emerged in the sciences and lately in other disciplines. It is defined as a time where forces of change sustain increased uncertainty and types of ignorance emerge that make decision-making problematic. Indeed Sardar notes that "the spirit of our age is characterized by uncertainty, rapid change, realignment of power, upheaval and chaotic behavior" (Sardar 2010, 435).

The concept of "postnormal" stems from the mathematics of risk and was introduced by Funtowicz and Ravetz (1995). The authors' ongoing studies to date are highly cited and illustrate increasing uncertainty in scientific work. According to their argument, science was no longer behaving in a "normal" way. The theoretical extrapolations and logic of science showed signs of leading to increasing "man-made risks". They note that "the traditional claims to truth and virtue made for science can no longer protect it from the checks and balances that are applied to all other societal institutions. What important area of scientific progress is immune from problems of uncertainty and value-conflict? That is the measure in which all of science has become post-normal" (Ravetz and Funtowicz 1999, 641). Indeed, as noted by Sardar (2015), what has been recognized as "postnormal" in science is now equally applicable in other disciplines and social systems generally.

The critique that "normal" is normative and differs significantly in space, and place has been leveled at PNT theory. It suggests that the notion of our times being typified as "postnormal" is not universally true. Sardar (2015) points out that the opposite of "normal" is "abnormal", not "postnormal". "Postnormal" suggests that a point in time has emerged that exists after frequently encountered ways of being,

doing, and knowing. It does not necessarily suggest a social pathology or an abnormality in the status quo. Rather it suggests that most of our observations can no longer be continuously and linearly extrapolated. In other words, we can no longer depend on patterns of the past repeating into the future. PNT theory suggests that uncertainty, rapid change realignment of power and changed behaviors decrease our confidence to rely on that which we have known to be normal, conventional, and orthodox (Sardar 2015).

Sardar is not alone in his assertions that the world has entered an age typified by uncertainty and a dramatically decreased confidence in decision-making. Indeed, authors across all disciplines confirm that society has entered an age of "post-normality". Hamel (2000, 5) goes further and suggests that "we now stand on the threshold of a new age – the age of revolution . . . we know it is going to be an age of upheaval, of tumult . . .For change has changed. No longer does it move in a straight line – change is discontinuous, abrupt, seditious". Similarly, this transitional "post-normal" age is described as the conceptual era (EFMD 2012), again defined by the rapid rate of change, discontinuity, and inability to maintain control in our times.

Numerous more conventional works affirm that the world has entered a new era of some kind. While its description varies from "revolution" to "conceptual", what is important to note is that (a) change is occurring faster than previously and is discontinuous (time), (b) systemic environments are increasingly virtual (space), and (c) artifacts and items of value are increasingly intangible (matter). The idea is increasingly recognized that in response to this change, new capabilities are required that "conceptualize" rather than "analyze". Not only are organizations less confident due to discontinuity and uncertainty but increasingly dependent on humans with capabilities to conceptualize and "generate" new solutions and ideas. This is the principal impetus underpinning the massive importance being placed on creativity and innovation.

Universities are not immune to this shift and its imperatives due to the postnormal times they operate in. Not only are they (i) subject to the impact of unprecedented change, but, for many, they are also (ii) required to respond adequately in developing the human capabilities and research that promote advancement in innovation and human progress. These two challenges are not independent of each other. The inability of universities to respond to environmental change is linked to their being less likely to respond adequately to develop the capabilities needed to anticipate and create value within an environment in flux.

Innovation and Universities

What is the best response to postnormal times? Unless one adopts a fatalist paradigm, Sardar (2010, 435) suggests, and Hamel (2009) agrees, that "an ethical compass and a broad spectrum of imaginations from the rich diversity of human cultures" is needed to guide humanity toward normalcy. This is not as complex or esoteric as it seems. It perfectly aligns with what the majority of governments, private entities, and not-for-profit organizations are calling for – innovation. This

includes the United Kingdom's Department for Innovation Report Universities and Skills (2008) that highlighted the importance of developing the capacity to innovate in creating and maintaining capabilities to respond to all facets of environmental change.

Change, in its broadest sense, is closely associated with innovation (Baregheh et al. 2009). Innovation discourse spans all disciplines in the form of developing new or repurposed products, processes, services, or models, and in the form of the creative abilities, process and development required to produce innovation. This gives rise to various interpretations of innovation from a multitude of disciplinary perspectives and has led to no single authoritative definition of the term.

Despite the lack of a single, authoritative definition, a number of common attributes are associated with the concept of innovation (Baregheh et al. 2009). Innovation includes the ability and process to develop something new or repurposed that has value. These can be goods, processes, services, or models. Innovation is closely associated with the notion of creating value. It is therefore commonly interpreted from the economic perspective of financial value and enhancing the ability to gain competitive advantage (Baregheh et al. 2009). This association of new ideas with economic value closely resembles the phenomena of commodification (Bakker 2007). According to Appadurai (in Ertman and Williams 2005), commodification is the association of value with any object meant for exchange.

The notion of economic value as an indicator of innovation is strongly supported in the literature as a means to avoid economic uncertainty and is therefore attractive to private entities and governments alike. The prevailing neoliberal model of globalization reinforces this notion. Numerous studies confirm that associating innovation with economic value is a product of globalization and increased global economic competition (Engwall 2015). This suggests that the definition of innovation, as promoted in the literature, is strongly influenced by neoliberalism and places more normative questions like "what constitutes good research" into the background. Indeed the "commodification of academic research is a substantial and significant phenomenon . . .[and] pervasive commodification occurs in the engineering, biological, and medical sciences, and, on a somewhat smaller scale, in the physical sciences" (Radder 2010, 8–9).

Commodification is closely associated with commercialization. In universities, this is the phenomenon whereby universities pursue profit by selling the expertise of their researchers and the results of their enquiries. This dominance of economic criteria often occurs at the expense of more substantive arguments such as those derived from a more philosophical enquiry related to the way research in universities are structured, produced, and disseminated (Radder 2010).

A key premise of this chapter is that the association between innovation and financial measures of value has contaminated the concept of innovation itself. As the review of multidisciplinary literature by Baregheh et al. (2009) illustrates, innovation is increasingly defined in terms of a process aimed at creating new economic value. Attaching economic value and process to the concept of innovation confounds its definition much like what happened to the concept of sustainability (van der Laan 2014).

As the influential syntax around process and economic value increases, it gains in prominence while still ostensibly incorporating a universal ideal. As a result, parallel but distinct discourses have evolved around innovation. This is neatly captured by Baregheh et al. (2009), but the authors fail to apply a critical lens to the implications of associating a neoliberal perspective to what is essentially a less complex concept.

The fundamental question underpinning the increasing phenomenological problem of defining innovation is how "value" is assessed, characterized, changed, and predicted, and how it can be differentiated on the basis of vastly varying needs. The latter is directly associated with the source of confusion as innovation is not value-free and also not defined only in terms of economic value. This distinction is critical in considering how and to what extent universities innovate. It is also critical in determining the value of knowledge as an intrinsic feature of university endeavor. Indeed, it is suggested that redefining innovation to include a knowledge-based approach to innovation (rather than an organizational innovation process approach) will allow universities to capture the value of new knowledge that may not be defined as a product or technology yet still be innovative (Quintane et al. 2011).

While processes that enable innovation are important and often do realize innovative outcomes, innovation is not a process in itself. The innovation as an outcome is not necessarily constrained by process. Rather, *innovation is defined as a new or repurposed process, product, service, or model – indeed any new or repurposed idea that has value, not necessarily economic.* Christensen et al. (2011) agree that innovation can redefine quality and therefore perceived value whether aesthetic, procedural, or economic as does the knowledge-based conceptualization of innovation (Quintane et al. 2011).

The Relevant University

The Purpose of Universities

The debate as to the mission or purpose of the university is ongoing and currently being disrupted due to government policy, technology, and global economic competition (Christensen et al. 2011). Models of higher education range from it being institutions primarily devoted to extending and deepening human understanding to institutions contributing to economic growth. It can often encompass both approaches in a "one-size-fits-all" model. From the origins of the liberal arts whose "goal was the improvement of each and every student (and teacher) in order to make the progress of civilization possible [to] education adequate to the requirements of the job market", there is no resolution to the question as to what the purpose of universities are (Weber 2016, 207).The diversity of opinion is further complicated by "government policy attempting to change the nature of the university as we have it" (Willets 2011, np) in addition to the prickly question of academic freedom and how reconcilable it is with the commercialization of research innovation.

Academic freedom is proposed as being the central purpose of universities, and suggestions made that a fully developed higher education system is dependent on the core values of academic freedom (Altbach 2001). At the heart of conceptualizing academic freedom is the autonomy of teaching and learning. This includes the pursuit and transmission of knowledge as related to research. Traditional threats to academic freedom have been political and subject to governmental interference. These have deprived academics of the absolute freedom of research and expression (Altbach 2001). Often the notion of academic freedom is expressed by universities as innate to their mission and definitive of, or driving, their purpose. Despite its lack of universally accepted definition, it is still seen as a core value of the modern university. Yet there is an apparent eroding of academic freedom in the twenty-first century that is more sinister than political censure or fear of ideological expression. This erosion of academic freedom can logically be proposed as simultaneously eroding the purpose of universities. Manifestations of this can be found from within the academy and university and are due, in part, to the commercialization of research and corporatization of university governance (Altbach 2001). These trends have increasingly impinged on the freedom of academics to act autonomously, influence the direction of the university and determine the direction and implementation of their research. As such, the purpose of universities is facing impediments as a result of the power of administrators and private proprietary interests whose prevailing discourse is primarily economic and short term (Bowen et al. 2014).

In considering the purpose of universities, it is worth revisiting the influential models shaping universities. The Humboldtian model of university has strongly influenced how Western universities have developed and see themselves. This has primarily been in terms of a focus on personal development through the freedom of holistic teaching and learning without interference from governments. In particular the Humboldtian model emphasizes the unity of (i) teachers and learners, (ii) research and teaching, and (iii) all branches of knowledge (Pritchard 2004). Many would argue that despite the attractiveness of the principles underlying the model, the notion that universities today are able to operate free from government or proprietary interests is less likely. That said, the Humboldtian purpose of the creation and transmission of knowledge does promote an entrepreneurial view of university innovation in the form of research outputs. In contrast, the Napoleonic model or "training model" of university articulates its purpose as primarily providing a public higher-level vocational education toward professional formation (Sam and van der Sijde 2014).

The British model on the other hand strongly supports the liberal education approach where a broad educational base is developed to enhance advanced thought and cognitive capabilities to deal flexibly and intelligently with the changes and challenging situations (Sam and van der Sijde 2014). The authors note that the emphasis of the British model is on character formation and is therefore also known as the "personality model". The British model operates within the general guidelines of government, but institutions are self-regulating and more autonomous than in the Humboldtian and Napoleonic models.

These models of university were incorporated to different extents into the Anglo-American model. The Anglo-American model places an emphasis on a mass

delivery system including the liberal arts as well as multidisciplinary professional education at the undergraduate level. Its postgraduate research is strongly aligned with the Humboldtian model. As such, the Anglo-American model is noted as being a "hybrid model" which has in turn influenced much of higher education globally including Europe (Baregheh et al. 2009).

The context of the evolution of higher education models over time provides a helpful framework within which knowledge-based innovation can occur. These culminate in broadly three areas:

(a) Research priorities aimed at commercializing knowledge outputs.
(b) Research priorities aimed at enhanced scholarship and knowledge advancement.
(c) University systems and operations.

Innovativeness

This brings us to universities seeking to be known for their innovativeness. The innovativeness of organizations is defined as the capacity of organizations to produce innovations continuously (Galunic and Rodan 1998). Universities are increasingly being assessed for their innovativeness. This is usually on the basis of economic returns. Within the spectrum of prevailing uncertainty and funding demands, universities are under pressure to promote and produce innovation defined by its economic value. Not only has this led to increasing commodification of research but "has led to a pervasive transformation of academic culture" (Radder 2010, 10). It is clear that a "one-size-fits-all" model of university innovation prevails (Davis 2006), and has strongly influenced university culture and has an emphatic focus on research commercialization.

While commercialization clearly represents an important way for academic research to contribute to economies and societies, there are multiple other ways in which university research can be recognized as innovative and transferrable. Despite knowing this, universities continue to focus on a narrow view of commercialization of products and technologies that does not (a) capture the noneconomic value of innovation in scholarship and non-commercial knowledge creation and (b) is not differentiated enough to fully realize each university's unique strengths or the overarching purpose of universities. This narrow perspective of innovation, principally promoted by industry and government, has constrained and even devalued knowledge-based university innovation (Quintane et al. 2011). Provocatively, it is proposed that university leadership are themselves complicit in defining university innovation only in commercial terms and therefore partly responsible for perceived lower innovativeness of their own institutions.

In the case of (a) above, many universities typically do not significantly promote (through the allocation of financial resources) innovation that does not translate into economic value. Characteristic of this is the low recognition placed on innovation in the arts and numerous social sciences. Programs such as philosophy, political science, visual, and performing arts are consistently innovative, but because they

are rarely linked to direct economic benefits, suffer from being overlooked as important contributors to university innovativeness. Even business disciplines, unless coupled to university enterprise such as executive education, are not recognized for innovation to the same extent as their commercialized cousins. This has resulted in a form of rationalization common among universities where they seek to emulate the behavior of large businesses (Engwall 2015). This rationalization ranges from scrapping programs that have no business value to limiting resourcing of these programs to a subsistence level.

Liberal arts in particular are recognized for being well positioned in leading the development of new approaches to dealing with uncertain futures (Chopp et al. 2015) yet face similar rationalization unless they are accommodated by dedicated liberal arts universities such as in the USA. The discourse around the role of liberal arts, their funding, and the extent to which they are recognized for their innovation has attracted much debate. Increasingly the rationalist view prevails which promotes professional training and vocationalism (Chopp et al. 2015). Yet, the liberal arts are seen as able to develop and promote the distinct form of cognitive capabilities needed in postnormal times, the conceptual era, or twenty-first century workplace. Indeed, this chapter suggests that the liberal arts are increasingly critical in developing the cognitive capabilities needed most in a time typified as transforming people and communities. Innovation in the liberal arts should be recognized as a distinct form of innovation to be valued by universities and society for their role in developing provident futures (Chopp et al. 2015).

In the case of (b), there is a dominance of one model of university. A case in point is the adoption and conception of universities in Australia based on only one model (British, 1800s) which has constrained the development of the sector (Davis 2006). Numerous universities globally have a similar problem in that they have ascribed to a particular historical model of university. Similarly, many university models are shaped by a "one-size-fits-all" university model (Lester 2005) based on the economic development ideology (Engwall 2015) and ranking methodologies (Davis 2006). While the majority of universities prevail under a singular notion of university, the implication on how leaders view innovation is dramatically slanted. In the majority, innovation is seen as a proxy for economic development where research outcomes are translated into economic value through patenting, licensing, investment, and new business formation. What seems to be less important are innovations that develop new business models, university products, expertise, and services that differentiate universities (Christensen and Eyring 2011). In fact, by innovating universities systemically in order to make them more relevant to their mission (which includes engaging the community and teaching), universities can decrease their susceptibility to the whims of industry and government policy (Christensen et al. 2011).

While some insist that the purpose of a university is to provide individuals with the knowledge and skills for the workforce, many universities either openly or subconsciously view skilling for the workforce as noncore business (Davis 2006; Wharton 2016). While this is not generally the case, the impact of funding, policies, regulations, key performance measures, and reputation indicators continues to forge a single model of university that prevails globally and is largely focused on research

outcomes ahead of teaching outcomes. Some, like the University of Phoenix, who clearly differentiate their offering (in this case by dropping research and having no academic tenure), seem to thrive. Measured against traditional assessment of innovativeness, Phoenix would not be regarded as innovative at all. Yet, its leveraging of technology, new business, models and modes of delivery would have it as one of the most innovative universities in the world with a student body of over 295,000 and unashamedly defined as a "university for working adults" (Davis 2006).

Despite these insights, the innovativeness of universities continues to be largely set against a single, highly competitive arena typified by economic outcomes through research and prestigious awards. These are largely identified in terms of monetary outcomes in the form of invention, new technologies, and new discoveries produced by research mostly in science, health and technology disciplines (Lester 2005). While progress in these disciplines remains critically important, much of the university innovation assessment system is based on outcomes in these domains. Rankings, government grants, and public funding allocations strongly reinforce this monolithic view of the university and its mission. This makes it difficult to consider alternative approaches and differentiated offerings (Lester 2005).

University Relevance in the Twenty-First Century

A more differentiated view of the role of the university is needed as it is unlikely that there will be agreement as to the purpose of universities. This disagreement on a global, overarching purpose of universities is irrelevant. Rather, it is more important to consider each university according to its own establishment, funding imperatives, and unique contribution to society. This will help address what is essentially an existential crisis in the sector. By diversifying university identities, promoting nontraditional models, and investing in unique strengths, universities can avoid the highly competitive, ranking-based paradigms dominating the sector. To achieve this, leaders need to "see" the sector differently and imagine their institutions as unique within the higher education system and broader needs of society. Unfortunately, even knowing this for some time now, the degree of differentiation among universities remains very low (Christensen et al. 2011) and is largely due to the "group think" of career academics who now lead the institutions.

There is overwhelming consensus that the time is right to reimagine higher education. Yet, universities are very slow to change with many exhibiting a monolithic group think, defensiveness, and resentfulness to change which limits their ability to redefine the mission of their institutions to optimize their value in times that demand an ability to change (Davis 2006). The challenges are largely regulatory, but Davis urges university leaders not to wait for government action, instead to define their own unique futures according to their strengths and potential. Key research findings have found for some time that universities should recognize that the one-size-fits-all model university model is no longer sustainable and that a more differentiated view of university missions is required (Christensen and Eyring 2011; Lester 2005). The transition from a one-size-fits-all model of university to a differentiated, contemporary, and

purposeful university meeting the needs of a rapidly changing world however is increasingly dependent on what have become highly centralized hierarchical leadership structures that emulate corporation management paradigms (Engwall 2015).

Universities are not corporations yet face pressure to act as such (Engwall 2015). This has numerous implications that challenge the nature and mission of universities and has even been described as leading to coercion and corruption. Coercion and corruption arguments against academic commodification focus on the "structural effects of unequal power relationships, while corruption arguments focus on the impact of commodification on the epistemic, social, and moral values of academic culture" (Radder 2010, 13). This is problematic especially in regard to the conceptualization of the value of university research in particular to the nature of knowledge, academic endeavor, and education. Corporates define their mission mostly in terms of profit. While most universities are required to at least meet budgetary expectations, they are more commonly concerned with building prestige. In many ways this dramatic shift in culture due to commodification has led to a hybridized "for-profit prestige" mission promoted by university leadership (Engwall 2015).

To be relevant many universities have followed the "prestige" model of mostly their American counterparts with a high focus on research strategies which aim to attract commercial value in highly competitive fields of research (Radder 2010). What is not commonly understood is that in striving to be prestigious, the prestige is often equated with "profitable" innovations. Of concern is that due to this narrow view of research innovation (and therefore strategic allocation of resources), universities are becoming more motivated by short-term gains from research often at the expense of a more holistic view of research innovation.

Relevant Postgraduate Research

The idea of an innovative university is widely accepted as being a relevant university, but the notion of what an innovative university is may not always be clearly articulated by the university itself. This is a telling observation as much of the debate about innovative universities has centered on research and not the broader role of the university (Davis 2006). With a focus on research, the notion of innovativeness has been closely associated with the commercial value of research as outlined above.

The literature has largely embraced the notion of equating innovation with direct economic value (Baregheh et al. 2009). The association with direct economic value further narrows down the "space" within which the university is seen to innovate, thus restricting it to a highly competitive arena within the sector. In many respects this approach neglects to recognize universities' innovations that have noneconomic benefits (brand, prestige, lean process, new services, etc.) or secondary economic benefits. Yet, as the authors suggest, the definition of innovation does not have to be that narrow, and the focus on commercialization is not a necessary precondition of university innovativeness.

Much of this "narrowness" of the definition of innovation is due to national economic models and resultant governmental and industry expectations. These are shaping universities to a degree that is arguably shifting the purpose of universities

out of their societal remit and threatening academic freedom (Altbach 2015a). Altbach concludes that "higher education is increasingly seen as a commercial product to be bought and sold like any other commodity … [and this] poses a severe threat to the traditional ideals of the university" (Altbach 2015b, 2). This notion affirms Davis (2006), Lester (2015), Christensen et al.'s (2011) and many others' concerns suggesting that the creation of monolithic institutions means universities are losing their identities. This is largely due to university leadership being unable to assert noneconomic values of the university as priorities or define a relevant research agenda falling outside the "one-size-fits-all" norm of commercialization. University leaders, the literature, government, and industry, all contribute to this loss of identity. Yet, it is the university leaders who are allowing "globalization to run amok" in the sector (Altbach 2015b, 2).

The norm of commercialization associated with universities is not new, neither is it the product of recent rapid change. Rather, the value of university enterprise has been recognized and known by commerce and government for centuries but always at somewhat of an "arm's length". Universities have been adept at retaining an academic freedom, that is, the right of the academy to teach and direct learning and research autonomously. In striving toward innovativeness, especially in postgraduate research, universities should uphold the principles of academic freedom.

Much of university activity has the potential to be innovative. The culture of universities ideally enables an innovative stance. The spectrum of potential value, not necessarily economic, extends significantly beyond the "one-size-fits-all" approach described above. One dimension of this potential is recognizing and supporting innovative postgraduate research beyond the traditional emphasis on scholarship. This includes original contributions to professional practice.

Universities should recognize the enormous potential of research undertaken by professionals that are mid to senior career.

Driven by lifelong learning imperatives, self-directed career development, and a credential-driven employment environment, nonacademic professionals are increasingly turning to higher education for (a) validation of the knowledge gained informally and nonformally (Colardyn and Bjornavold 2004) in their practice and (b) nontraditional academic offerings that contribute to their professional development.

In considering the relevance of postgraduate research offerings, it makes sense to stick to the university innovation agenda but in the broader paradigm of innovation that creates "*new or re-purposes products, services, process or models with value – not necessarily economic*". This aligns closely with the values of academic freedom and avoids undue interference. It also recognizes the broad scope of innovative research and is not constrained by economic measures of value.

Research: From Mode 1 to Mode 2

It is argued that the approach to research and how it is viewed and valued within universities has not changed much since the last century. It is further suggested that many university leaders have group think in the way they administer universities.

These are hotly contested assertions that signal disquiet in viewing how the research functions of universities are executed. Irrespective of the merits of this debate, the work of Gibbons et al. (1994) has changed the way we think and theorize about research.

Gibbons (1998) describes research as "knowledge production". He suggests that this takes place in two "modes" and that there is a transformation from "Mode 1" to "Mode 2". Mode 1 is the traditional approach to disciplinary-based knowledge production that has disciplinary boundaries (Gibbons et al. 1994). These disciplinary boundaries are informed by the cognitive and social norms that govern basic research and academic sciences which are typically unpractical.

Gibbons (1998) notes that Mode 1 research is a form of knowledge production that is focused on assuring the compliance with what is regarded as scientifically sound in research practice and is typically carried out without a context of application.

Mode 2 is a transdisciplinary form of knowledge production that is carried out within a context of application (Gibbons 1998). More pertinently this "new" mode of research is a more complex system of knowledge production that takes multiple perspectives into account. The production of Mode 2 research knowledge is not produced only within university but even beyond the university boundary, moving closer to real-world problems (Gibbons et al. 1994).

The emergence of Mode 2 research paradigms explains Gibbons (1998) supports the argument that teaching and research cannot be conducted in isolation and that research has to be undertaken within the context of its application in order to understand complex systems.

The transition from a Mode 1 to a Mode 2 research paradigm is becoming increasingly compelling and recognizable in the growth institutes of technology and postgraduate business programs. In the Mode 2 paradigm, the university is only one of the actors in the knowledge production system and is required to collaborate more broadly. This mode challenges universities to take the lead in training skilled and creative individuals and is aligned with the needs of a rapidly changing workforce.

Since the concept of Mode 2 has emerged, a university is regarded as only one of the agents of knowledge production for innovation (Laredo 2007). This clearly illustrates that the university is required to be shaped and behave as a collaborative co-creative open system requiring close cooperation and consideration of other actors from individuals to other institutions. To date, this has largely been interpreted through the lens of economic measures of innovation success. The influence of this broadly held paradigm has, in the absence of government regulation, caused dissonance in universities where a lack of economic value from collaboration is largely dismissed.

It is proposed that following close upon the emergence of the Mode 2 research paradigm, the rapidly changing workforce skills demands compel universities to look upon individuals as collaborators of equal standing. At a postgraduate research level, participants will increasingly be currently employed professionals in their mid to senior careers. The nature of university/career professional research collaboration

has been largely overlooked in the literature. Notable exceptions are that represented in the literature associated with work-based learning which is described as a third-generation postgraduate research (Wildy et al. 2015).

Third-Generation Postgraduate Research

So why examine the connection between universities, its leaders, postgraduate research programs, and the changing nature of work? In addition to educating young adults for the careers upon which they are about to embark, universities are increasingly called upon to provide educational and entrepreneurial opportunities for those already functioning in the workforce (Sam and van der Sijde 2014). Much has been written about the critical skills and knowledge required by the workforce for an economy to remain relevant in the twenty-first century. These have shifted from a focus on the rational application of knowledge to the cognitive capacity to generate new applications of knowledge, co-creating new value, and conceptualizing new solutions and "ways of working" (Christensen and Eyring 2011).

If the mission of universities is to educate, conduct research, and engage with their communities, it is increasingly difficult to justify an attitude of detachment between universities and fit-for-work education especially as it relates to cognitive abilities. In a sense, the shift in modes of work as typified by the "conceptual era" described above is highly dependent on university-facilitated cognitive development of individuals. "This idea responds to the current role of university in developing an entrepreneurial spirit in students to be prepared for and cope with the rapidly-changing needs of the labor market" (Sam and van der Sijde 2014, 899).

Typically, mid-career, adult learners are increasingly engaging in university education. While many already have the foundational knowledge required for their professions, most recognize that there is an ever-increasing imperative to continue learning and directing their careers in what is essentially a credential-driven world. This necessarily includes developing the cognitive abilities to perform more complex tasks associated with their more complex professional practice contexts. Rather than a doctorate "licensing research" or acting solely as a "passport to the academy" (Wildy et al. 2015), the professional doctorate serves an educative function of enabling students to address work and professional problems in a rigorous, scholarly manner that contributes to knowledge outcomes (Costley and Lester 2012).

Many in the university sector disagree however that it is "higher education's mission to prepare people for the skills they need in an up-to-date fashion for the 21st century" (Wharton 2016, np.). This constitutes what the Wharton Reimagine Education series describes as "problem number one" in the disconnect between academia and workforce development. It also illustrates the gap between the dominant paradigms of university leaders, their increasing managerialism, and the increasingly complex demands of changing society on universities.

In addition to the complexity and disruption emerging out of technological advancement, the call for more multidisciplinary study in universities is increasing in urgency. Not only is there an emerging convergence of disciplines that mirror

application (Sharp et al. 2011), but there is also a blurring between research and teaching for the same reasons. No longer is university education typified by disciplinary boundaries and a sharp distinction between teaching and research. Re-examination of postgraduate research degree offerings fits into a model of innovation that repurposes products, services, or processes. Research higher degrees are refocused to be "socially useful" and make significant workplace and professional contributions rather than simply as professional accreditation for working within universities (Wildy et al. 2015). Wildy et al. (2015) refer to these third-generation higher degrees as more of "an equal partnership between the academy and the workplace". Third-generation postgraduate degrees also take into account experiential learning with the assumption that knowing who and what oneself is in the world is one of many ways of knowing the world (Armsby 2013).

The university model of the future is mirroring changes in society as it has always done. In these times, typified by rapid change, the changing nature of knowledge(s) and the blurring of traditional university paradigms, a new model of education is emerging to enable education and development of scholarly professionals.

The New Model

If, as we have argued here, the neoliberal mode of universities and postgraduate education that privileges economic outcomes as the dominant value for innovation results in a decrease in academic freedom, what kind of model should institutions be examining for the future?

The future in question is accepted as one that whatever its form, its main attribute will be new models of work, particularly work that is more "working". That is, something that is not focused on place or employer, or even time (Blustein 2013). Leadership competencies for this "postnormal" future will be leaders who can tolerate ambiguity, engage with complexity, ride out change, critically evaluate, and rise above chaos. An agile and resilient education institution will not only embody these characteristics in its own leadership and structures but also be able to facilitate future ready citizens through its education programs.

Postgraduate education that opens the gate to knowledge(s) and alternate ways of looking at the world is essential. If an institution only offers one mode of education, one way of looking at the world, it cannot build these future ready citizens. Knowledge production does not only take place in a university. A partnership between universities' training in rigorous critical thinking and capacity to do structured and systematic thinking and testing of ideas and multidisciplinary work-based learning is one model for the future. Such a model is illustrated by the growth of third-generation professional studies programs. These programs do not supplant traditional postgraduate degrees but instead offer a more flexible, nuanced approach to knowledge and innovation that takes as its starting point that knowledge creation is two-way between universities and workplaces and that multidisciplinary approaches and collaborations have a strong connection to innovation of all kinds, not just economic. Those universities, in addition to their traditional roles, are meant

to play roles in industry and government as part of an interrelated ecosystem managing change (Etzkowitz 2006).

The enabling system for this model is dependent on leadership. Postnormal times demand postnormal leadership and strategy. In a sector and time of extraordinary flux, the need for sound higher education strategies is arguably at its highest. Within a deregulated industry, previously held assumptions related to universities' missions, service, and funding models are being challenged especially in the midst of increasing privatization and online learning trends. The strategic response to these environmental changes may see some universities prosper, and others face irrelevance as effective strategy is empirically associated with organizational success (Finkelstein and Hambrick 1996) and leadership enables effective strategy.

Generally, there is sound capacity in Queensland regional universities, although they are largely still embedded in a paradigm of managerialism and traditional practices (van der Laan and Erwee 2013). Van der Laan and Ronel found that there was a strong disconnect for Australian universities between the awareness of a need to develop adaptable resilient open systems and the existence of strategies for doing so. They conclude that Australian regional universities are in "safe hands but not strategically good hands" (van der Laan and Erwee 2013).

What is needed for university leaders is an ability to step away from old dependencies of established career paths and educational profiles within highly co-dependent government funding dispensations and policies to consider how best to develop the attributes and skills of postgraduates to face the uncertainty, rapid change, realignment of power, upheaval, and chaotic behavior of postnormal times. We live in an in-between period where old orthodoxies are dying, new ones have yet to be born, and very few things seem to make sense. Ours is a transitional age, a time without the confidence that we can return to any past we have known and with no confidence in any path to a desirable, attainable, or sustainable future. One way to face this challenge is for university leaders to take the steps to build these future ready citizens who have the skills to create the knowledge(s) needed for an uncertain future. That, more than anything else, is innovation.

References

Altbach, Philip. 2001. Academic freedom: International realities and challenges. *Higher Education* 41 (1): 205–219. https://doi.org/10.1023/A:1026791518365.

Altbach, Philip. 2015a. The costs and benefits of world-class universities. *International Higher Education* 33; 5–8.

Altbach, Philip. 2015b. Higher education and the WTO: Globalization run amok. *International Higher Education* 23; 2–4.

Bakker, Karen. 2007. The "commons" versus the "commodity": Alter-globalization, anti-privatization and the human right to water in the global south. *Antipode* 39 (3): 430–455.

Baregheh, Anahita, Jennifer Rowley, and Sally Sambrook. 2009. Towards a multidisciplinary definition of innovation. *Management Decision* 47 (8): 1323–1339.

Blustein, David. 2013. The psychology of working: A new perspective for a new era. In *The Oxford handbook of the psychology of learning*. Mahwah: Lawrence Erlbaum.

Bowen, William, Michael Schwartz, and Lisa Camp. 2014. The end of academic freedom: The coming obliteration of the core purpose of the university. Scholarship Collection. Book 140. http://engagedscholarship.csuohio.edu/scholbks/140.

Bstieler, Ludvig, Martin Hemmert, and Gloria Barczak. 2015. Trust formation in university–industry collaborations in the US biotechnology industry: IP policies, shared governance, and champions. *Journal of Product Innovation Management* 32 (1): 111–121.

Chopp, Rebecca, Susan Frost, and Daniel H. Weiss. 2015. *Remaking college: Innovation and the liberal arts*. Baltimore: Johns Hopkins University.

Christensen, Clayton M., and Henry J. Eyring. 2011. *The innovative university: Changing the DNA of higher education from the inside out*. San Francisco: Jossey-Bass.

Christensen, Clayton M., Michael B. Horn, Louis Caldera, and Louis Soares. 2011. *Disrupting college: How disruptive innovation can deliver quality and affordability to postsecondary education*. Washington, DC: Innosight Institute, Center for American Progress.

Colardyn, Danielle, and Jens Bjornavold. 2004. Validation of formal, non-formal and informal learning: Policy and practices in EU member states. *European Journal of Education* 39 (1): 69–89.

Costley, Carol, and Stan Lester. 2012. Work-based doctorates: Professional extension at the highest levels. *Studies in Higher Education* 37 (3): 257–269.

Davis, Glyn. 2006. What is the future for Australia's public universities?, 85–9 The Sydney Papers. Autumn.

EFMD. 2012. Workplace learning: New thinking and practice. *European Foundation of Management Development: Global Focus* 6 (01).

Engwall, Lars. 2015. Corporations and universities. *European Review* 23 (04): 501–510.

Ertman, Martha, and Joan C. Williams. 2005. *Rethinking commodification: Cases and readings in law and culture*. New York: NYU Press.

Finkelstein, S. and Hambrick DC. 1996. Strategic leadership: Top executives and their effects on organisations. West, St Paul, Minnesota.

Funtowicz, Silvio, and Jerome Ravetz. 1995. Science for the post normal age. In *Perspectives on ecological integrity*, ed. Laura Westra, and John Lemons, 146–161. Springer, Netherlands.

Galunic, D. Charles, and Simon Rodan. 1998. Research notes and communications: Resource recombinations in the firm: Knowledge structures and the potential for Schumpeterian innovation. *Strategic Management Journal* 19 (12): 1193–1201.

Gibbons, Michael. 1998. *Higher education relevance in the 21st century. Working paper*. Washington, DC: The World Bank.

Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. 1994. *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.

Hamel, Gary. 2000. *Leading the revolution*. New York: Penguin.

Hamel, Gary. 2009. Moon shots for management. *Harvard Business Review* 87 (2): 91–98.

Henry, Etzkowitz. 2006. The new visible hand: an assisted linear model of science and innovation policy. *Science and Public Policy* 33 (5): 310–320

Kneller, Robert, Marcel Mongeon, Jeff Cope, Cathy Garner, and Philip Ternouth. 2014. Industry-university collaborations in Canada, Japan, the UK and USA–with emphasis on publication freedom and managing the intellectual property lock-up problem. *PLoS One* 9 (3): e90302.

Knowledge@Wharton blog. 2016. College vs. business training: What do employers want?. University of Pennsylvania. http://knowledge.wharton.upenn.edu/article/college-vs-business-training-what-do-employers-want/. Accessed 12 Aug 2016.

Krahe, J.A. Eve, and Amy K. Fitzgerald. 2015. Innovation studio 101. *American Association of University Administrators* 30 (1): 82–101.

Laredo, Philippe. 2007. Revisiting the third mission of universities: Toward a renewed categorization of university activities? *Higher Education Policy* 20 (4): 441–456.

Leitch, Lord S. 2006. *Leitch review of skills: Prosperity for all in the global economy–world class skills. Final report*. London: The Stationery Office.

Lester, Richard K. 2005. Universities, innovation, and the competitiveness of local economies. A summary Report from the Local Innovation Systems Project: Phase I. Massachusetts Institute of Technology, Industrial Performance Center, Cambridge, MA, Working Paper Series.

Pauline, Armsby. 2013. Developing professional learning and identity through the recognition of experiential learning at doctoral level. *International Journal of Lifelong Education* 32 (4): 412–429

Pritchard, Rosalind. 2004. Humboldtian values in a changing world: Staff and students in German universities. *Oxford Review of Education* 30 (4): 509–528. https://doi.org/10.1080/0305498042000303982.

Quintane, Eric, R. Mitch Casselman, B. Sebastian Reiche, and Petra A. Nylund. 2011. Innovation as a knowledge-based outcome. *Journal of Knowledge Management* 15 (6): 928–947.

Radder, Hans. 2010. *The commodification of academic research. Science and the modern university.* Pittsburgh: University of Pittsburgh Press.

Ravetz, Jerome R., and Silvio Funtowicz. 1999. Editorial. *Futures* 31 (7): 641–646.

Sam, Chanphirun, and Peter van der Sijde. 2014. Understanding the concept of the entrepreneurial university from the perspective of higher education models. *Higher Education* 68 (6): 891–908.

Sardar, Z. 2010. Welcome to postnormal times. *Futures* 42 (5): 435–444.

Sardar, Ziauddin. 2015. Postnormal times revisited. *Futures* 67: 26–39.

Savior, Richard D., and Bruce S. Cooper. 2015. Lessons in university leadership: Reports from religious and secular university presidents. *American Association of University Administrators* 30 (1): 102–109.

Sharp, Philip, Charles Cooney, Marc Kastner, Jacqueline Lees, Ram Sasisekharan, and Michael Yaffe. 2011. *The third revolution: The convergence of the life sciences, physical sciences, and engineering. White paper on convergence*. Washington, DC: Massachusetts Institute of Technology (MIT). Policy@ MIT. 20.

Stan, Lester. 2015. A vocational qualifications system fit for adults? Revisiting some ideas from the university for industry. *Higher Education, Skills and Work-Based Learning* 5 (2): 102–116.

van der Laan, Luke. 2014. Community capacity building: The question of sustainability? In *Community capacity building: Lessons from adult learning in Australia*, ed. Glen D. Postle et al. Leicester: National Institute of Adult Continuing Education (NIACE).

van der Laan, Luke and Ronel Erwee. 2013. In good hands? Foresight and strategic thinking capabilities of regional university leaders. In Proceedings of the 36th Higher Education Research and Development Society of Australasia Conference (HERDSA 2013). Higher Education Research and Development Society of Australasia (HERDSA), Auckland.

Weber, M. 2016. On the purpose of a university education. *Educational Philosophy and Theory* 48 (2): 207–210.

Wildy, Helen, Sanna Peden, and Karyn Chan. 2015. The rise of professional doctorates: Case studies of the doctorate in education in China, Iceland and Australia. *Studies in Higher Education* 40 (5): 761–774.

Willets, David. 2011. In Harriet Swain. 11 October 2011. What are universities for? The Guardian. https://www.theguardian.com/education/2011/oct/10/higher-education-purpose. Accessed 12 Aug 2016.

Pressures, Pathways, and Practices: Learning as a First-Year International Research Candidate

6

Marie Manidis

Contents

Abstract

The chapter examines the in situ learning of international higher-degree research (IHDR) candidates in their first year of enrolment. This initial year of a research degree is characterized as one of the intense institutional, disciplinary, and research learning (Brown, Navigating international academia: Research student narratives. The Netherlands: Sense Publishers, 2014). Candidates' learning is examined in the context of broader pressures on doctoral pedagogy as well as in the context of local orientation and academic practices and disciplinary pathways. Learning is understood as "an outcome of participating in practice" (Boud and Hager, Studies in Continuing Education 34(1): 17–30, 2012, p. 23).

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Progress in IHDR candidates' learning is investigated through an extensive ethnographic study supplemented by findings from a precursor evaluation survey. Theoretically the studies draw on practice-based views of learning and knowledge (Gherardi and Strati, Learning and knowing in practice-based studies. Gloucester: Edward Elgar Publishing Limited, 2012; Schatzki, Introduction: Practice theory. In The practice turn in contemporary theory, eds. Schatzki, T.R, K. Knorr Cetina, and E. von Savigny, 1–14. London: Routledge, 2001) and trends in the growing importance of (scientific) knowledge itself in our everyday lives (Knorr Cetina 1999. Epistemic cultures: How the sciences make knowledge. Cambridge: Harvard University Press; Nerland Research & Occasional Paper Series: Center for Studies in Higher Education, University of California, Berkeley 14: 12, 2012).

The aim of the chapter is to highlight how and why participating broadly and proactively in research actions and activities (nested in practices Green, The primacy of practice and the problem of representation. In Understanding and researching professional practice, ed. B. Green, 39–54. Amsterdam: Sense Publishers, 2009b) make a difference to first year IHDR learning. Recommendations are made regarding the importance of attending to the frequency and kind of candidate, supervisory, and disciplinary practices (Maton, Canons and progress in the arts and humanities: Knowers and gazes. In Social realism, knowledge and the sociology of education, eds. K. Maton, and R. Moore. London: Continuum International Publishing Group, 2010) maximizing participatory involvement within disciplines. The depth and richness of the empirical data are likely to provide useful insights useful for international research candidates, their supervisors, and academic staff alike.

Keywords
Higher education · Research pedagogy · International candidates · Learning · Epistemic and research(er) practices

Introducing the Chapter

While there has been extensive research into higher education (HE) pedagogy, it is only relatively recently that attention was paid to how learning happens in situ in the context of epistemic cultures (Nerland 2012). This chapter pursues this "turn" to ways knowledge is (re)produced in specific settings as practice-based views on learning and knowledge gain prominence and the importance of (scientific) knowledge itself in our everyday lives grows (Gherardi and Strati 2012; Knorr Cetina 1999; Nerland 2012; Schatzki 2001).

Using these trends as a starting point for investigating research learning, the chapter draws on and extends research on PhD learning and candidates' practices involved in the "doctoral enterprise" in Australia (Cumming 2007). Cumming's study, part of an ARC Project entitled *Reconceptualising the Doctoral Experience*, drew on a practice-based approach investigating what doctoral candidates (learn to)

do. He illustrated how candidates were required to navigate, synthesize, and enact considerable social, material, and situated know-how in a range of settings as they progressed in their candidatures. Cumming examined cross-disciplinary research learning and categorized a set of generic practices progressively enacted by research candidates into four domains: curricular, pedagogical, research, and work (2007, p. 116). This chapter shifts the focus from Cumming's generic practices to specific ones looking at how candidates participate in and learn to enact these in disciplinary contexts.

The chapter unfolds as follows. It begins by situating IHDR learning as part of "an ecology of practices" (Kemmis et al. 2014) illustrating how the context of research learning is impacted on by global shifts in research pedagogy as well as by local university and faculty arrangements. These contextual factors are shown to play a significant role in how learning progresses for new candidates. This is followed by an analysis of the broader and more site-specific pressures, pathways, and practices revealing how they intersect in situ – in practice – in learning research. Research itself is examined as a practice, and learning is conceptualized as (progressively) knowing how to enact the practice of research (Gherardi 2008; Kemmis et al. 2014; Schatzki 2001).

In describing and analyzing research learning in situ, a focus on the social and material aspects of research learning makes visible epistemic, relational, and professional features of HE pedagogical practices that support or limit first year IHDR study. Actions and activities, nested within pedagogical practices (Green 2009b), are categorized in a participatory framework of integrating, initiating, imitating, and incubating, which are represented diagrammatically and glossed in the chapter. These are broad categories framing the diversity of praxis surrounding research candidates, including their agency, their supervisors' relational and professional care, and the learning afforded by their epistemic cultures. Praxis is understood as the complex of intelligible actions and activities unfolding with regularity and familiarity, in situ – i.e., in a social and material setting.

Finally, the concluding comments of the chapter propose that participating (broadly and proactively) in research practices is identified as the basis of first year IHDR learning. While this proposal may appear self-evident, it is supported by empirical data in the study and equally by practice-based theoretical underpinnings. As "[l]earning is directly implicated in practice, [it] can be represented as an outcome of participating in practice" (Boud and Hager 2012, p. 23). The empirical data support the contention that, embedded within the broader contexts of their candidatures, participating is facilitated in three principal ways. These are through:

- Agency by candidates
- Proactive relational and professional "care" (Gherardi and Rodeschini 2015; James and Baldwin 1999; Jones 2013; Noddings 2003) by supervisors and others
- The social and material features of disciplinary knowledges themselves

The chapter ends with a challenge for the academy to understand more deeply how agency and care *matter* in the first year and how these can be fostered rather

than limited. It adds an additional challenge to those responsible for research learning: take lessons from disciplines whose social and material features inherently facilitate participating and encourage similar practices in disciplines whose epistemic settings are structured in ways that minimize participating. The final comments presage that challenges are ever more pressing as external pressures now impacting on research learning – foreshadowed in the final quote of the chapter – are increasing.

Researching Research Learning

Researching research learning has been approached through two studies: an extensive ethnographic study supplemented by data from a precursor evaluation survey. The survey, undertaken in 2014, was a pilot study of 11 supervisors and 26 IHDR candidates who took part in an evaluation of early learning in their research candidatures. Candidates and supervisors responded to questions on their early learning experiences in focus groups and one-on-one interviews during July and August 2014 in a project entitled *International [Post Graduate] Research Student Experience* (Integrating and Improving the International UTS HDR Experience – UTS HREC REF No. 2014000337).

The in-depth ethnographic study, undertaken between April 2015 and June 2016, recruited a further eight IHDR candidates from a range of disciplines and their supervisors. Candidates nominated to participate in this project (An investigation of International HDR students' first year of study at UTS – what are the factors that best support their learning? UTS HREC REF No. 2014000331) that would follow them in their first year and explore their learning and experiences orienting to the university. Focused and linguistic ethnographic methodologies (Kornblauch 2005; Rampton et al. 2015) were used including observations and audio-recordings of candidates in supervisory meetings, in seminars, in laboratories, at their desks, and at the Confirmation of Candidature presentation. Candidates' and supervisors' actions and sociomaterialities in these settings were the focus of the observations and analysis. Candidates and supervisors were also interviewed to ascertain their experiences and conceptualizations of IHDR first year research learning.

Although the number of participants in both studies is relatively small, pedagogical progress (or not) was impacted on significantly by candidates' own agency but, perhaps more importantly, by supportive (or otherwise) supervisory practices. This supports existing research on the importance of professional and culturally attuned supervision for research candidates in HE contexts (James and Baldwin 1999; Jones 2013; Manathunga 2014; Noddings 2003). In addition the social and material features of disciplines as epistemic sites were shown to *matter* in first year learning. These findings also reflect emerging research in this domain (Fenwick et al. 2011; Nerland 2012; Parry 2007; Perrotta 2013) (Table 1).

Below, the learning experiences of the IHDR candidates who participated in this study in their first year are examined in the context of identified pressures, pathways, and practices. The participants included six female candidates, Margarita (all names

Table 1 Adapted from Table 1 (Manidis and Goldsmith 2017 p. 7) Lists the data collected across both projects

Research activities	Hours	Hours	Number of participants
Involvement of incidental bystanders	–	–	30 (approx.)
Interviewing candidates (evaluation study)	–	5	26
Interviewing supervisors (evaluation study)	–	4.95	11
Meeting one-on-one meetings or having catch-up discussions with candidates (ethnographic study)	35.91	–	8
Doing questionnaire interviews with candidates (ethnographic study)	4	–	–
Interviewing supervisors (ethnographic study)	4.75	–	8
Observing candidate presentations/other activities	2.5	–	–
Doing "lab" observations (ethnographic study)	9.95	–	–
Doing desk observations (ethnographic study)	9	–	–
Attending supervisory meetings (ethnographic study)	10	–	–
Attending team meetings (ethnographic study)	10	–	–
Attending Confirmation of Candidature presentations (ethnographic study)	4.8	–	–
Additional hours (one-on-one meetings)	8.559	–	–
Totals	99.96	9.95	83

are de-identified, and minor factual changes that do not impact on the findings have been altered for anonymity) (science), Sophia (science), Janita (engineering), Renata (education), Rosemary (health economics – business), and Narita (science), and two male candidates, Samuel (science) and Alsadi (engineering). Madeleina from the survey study and supervisors' comments are included at relevant junctures.

Learning as Participating, Participating as Learning

The focus on participating as central to research learning is connected to ways in which research pedagogy, knowledge, and in situ learning are progressively being conceptualized. Undertaking a research qualification means advancing new disciplinary (or cross-disciplinary) knowledge, yet processes for doing this, and what is understood by the term knowledge, are not straightforward. In educational and organizational terms, knowledge has been understood in either predominantly cognitive terms as a possession or as something that is done together, i.e., Cook and Brown (1999) and Gergen (2009).

What is understood by learning more generally and particularly in an organizational setting is equally contested with theoretical differences having evolved over several decades (Hager 2011; Sfard 1997). Sfard's seminal paper draws on the metaphors of *acquisition* and *participation* to explain the above educational debate on different understandings of knowledge and learning. Hager's paper traces

developments in learning theory, ranging from psychometric traditions to post-structuralist ones, including more recent practice theory approaches.

The practice-based perspective adopted here focusing on first year IHDR learning conceptualizes knowledge as knowing, enacted in doings, sayings, seeings, and relatings (Kemmis 2009), i.e., practices. Practices are made up of activities, "carried in and realised through the flow of action" (Green 2009b, p. 47), and are therefore not directly visible themselves. Rather they can be inferred from the performative aspects – i.e., the activities and actions – of candidates, supervisors, and others. In essence, practices go "beyond [merely] describing what people do. . . [p]ractices are, in fact, the creation of meaning, identity formation, and ordering of activities produced" (de Souza Bispo 2015, p. 314). In other words, practices reflect the expectations, rules, know-hows, and intelligible activities and actions required in a particular disciplinary setting, enacted as recognizable embodied and/or discursive performances.

And learning practices are understood to occur through participating in them (Boud and Hager 2012; Gherardi 2008; Schatzki 2001) with knowing understood as "a dynamic, emergent activity that is fluid and processual" (Manidis 2013, p. 30). Whether candidates are proactively taking part or participating through being inducted into faculty and/or university practices, participation is considered a pre-requisite for learning (Gherardi 2013; Gherardi and Perrotta 2010; Nerland 2012). As candidates progressively participate in disciplinary actions and activities in their new setting – interacting socially, materially, and in embodied ways (Hopwood 2016) – they are understood to draw on multiple knowledges in the environment on the way to "becoming" competent in research (Gherardi 2008).

Connecting Pressures, Pathways, and Practices

In locating candidates in "an ecology of practices" (Kemmis et al. 2014), it was necessary to examine how global shifts in research pedagogy as well as local university and faculty arrangements were already impacting on the context of research learning. In this regard, substantial changes to the purposes of research pedagogy elsewhere and in Australia have been shifting for some time. For example, the weighting of research pedagogical outcomes has been moving toward being more (globally) competitive, more important, and more industry-focused (Cumming 2007; DIISRTE 2012; Felt et al. 2013; Nerland 2012). While competition has been making it harder for IHDRs to get into selected Australian universities nowadays, other opportunities have seen them benefiting from internships and industry scholarships. Once accepted for enrolment however, they anomalously benefit from Australia's own goals for its research graduates designed to contribute to *this* country's national innovation, economic and social objectives (DIISRTE 2012).

As the PhD qualification in Australia progressively aligns with the Bologna Process Reform initiatives (EHEA 2010), IHDRs are benefitting from focused programs aimed at research skill development. Australia's desire is to prosecute a dual purpose for research education: advancing knowledge *and* developing "a researcher"

– an individual with particular research skills (DIISRTE 2012). Additional advantages are that Australia views "its" researchers as an embodied link to Asia, in particular, because of the country's geographical proximity to the ASEAN region. Asia's booming tertiary education markets have not gone unnoticed, and research and researcher ties can strengthen innovation, "political, economic, and trade links" with these countries (Hendrickson et al. 2013, p. 89).

Australian universities are taking in growing numbers of IHDRs (Norton and Cherastidtham 2014), a consequence which, in its turn, requires a more considered focus on how IHDRs are inducted and supported academically and pastorally (Commonwealth of Australia 2016).

At the faculty level, local and disciplinary actions and activities were expectedly reflecting social, material, and embodied ways of (re)producing knowledge (Nerland 2012) in those contexts. IHDR candidates, like all candidates, being in their particular and new spatiotemporal (Schatzki 2010) settings, were positioned to learn the discourses, practices, and identities of their disciplines (Maton 2010) as they (re) produced knowledge. Their new formal and informal learning spaces would be where they would be inducted into (Gherardi and Perrotta 2010) and/or would learn the disciplinary ways of doing, saying, seeing, writing, and relating, in particular faculties, as they progressed as researchers (Manidis and Addo 2017). As noted earlier, a particular, skilled kind of "researcher" is now required, one whose ways of enacting practices must be not only disciplinary but industry-focused and globally competitive as well (DIISRTE 2012).

The practice-based perspective provided a lens to focus on ways in which the IHDR candidates were required to progressively accomplish key "doings" of the pedagogy – a situated pressure. These included – among other activities – reading literature, collecting data, doing experiments, taking part in seminars, understanding theoretical concepts, receiving and using feedback to progress, starting to write a dissertation, and presenting their work in various forums. Significantly, participating in these – to a greater or lesser extent – was linked to the faculty and, principally, to the supervisor.

Supervisors are understood to play a significant role as each candidate's academic and pastoral care, and their learning is principally (but not completely) mediated through the university's supervisory practices. While supervisory practices share what Wittgenstein might term a "family resemblance" (1986, p. 34e), each supervisor/candidate dyad studied was unique. They varied from each other reflecting differences in the situated sociomaterial arrangements of each discipline and each supervisor or supervisory panel.

Arguably, different variations to learning practices would not automatically lead to the conclusion that, if candidates, supervisors, or others did "x," IHDR candidates would participate and would learn research practices. However, in order to accomplish key *doings* of the pedagogy, without participating, learning (and developing research(ing) expertise in situ) was not seen as possible (Gherardi 2013). In all aspects of the candidature, research(ing) expertise was found to be performative, involving progressive public displays – material and social – of knowledge.

As participating surfaced as a key mechanism enabling first year learning, it was understood in terms of what candidates, supervisors, and others did as regular

activities and through specific actions in situ. For the purposes of this chapter, activities have been incorporated into a non-exhaustive framework of four categories introduced earlier – *integrating*, *initiating*, *imitating*, and *incubating* – first described and then illustrated through empirical examples below. These types of activities resonate with findings from literature and institutional responses aimed at developing HE research cultures and tertiary knowledge (Cumming 2007; Nerland 2012; Ward 2013). They also reflect well-documented understandings of in situ learning from practice-based discourses and organizational learning literature (Gherardi and Perrotta 2010; Gherardi and Strati 2012; Kemmis et al. 2014; Nicolini 2013). Activities are represented in the following diagram as illustrative only (Fig. 1).

Integrating candidates into social and academic networks was identified as a key component of research learning as candidates were invited – and integrated themselves – into the research community in different ways and to varying degrees. This finding on the benefits of inclusivity into the research network is supported by extensive research on the role and significance of integrating candidates culturally, academically, and socially into the university (CAPA (Council of Australian Postgraduate Associations) 2012; Cumming 2007; Manathunga 2014; Marginson et al. 2010). Integrating practices also reflected those anticipated within duty of care parameters in providing support for domestic and particularly international candidates (Commonwealth of Australia 2016).

Initiating was also identified as a learning process underpinned by rituals or acceptance into the university community and into disciplinary activities. All candidates were welcomed into their faculties and into other workshops and were initiated into specific activities such as the faculty workshops and local practices. Faculties initiated candidates into their local doings, seeings, sayings, and relatings in keeping with traditional academic and epistemic traditions (Kemmis et al. 2014). In this sense, initiating was found to have a social as well as a ceremonial connotation, lending substance to stages of development in which candidates were

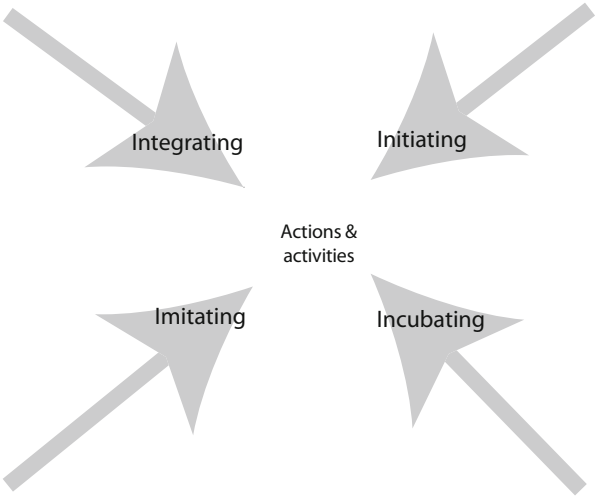


Fig. 1 Framework for participating and learning of PhD practices

required to progress through their candidates, marked by milestones such as the Confirmation of Candidature.

Imitating was made visible as a double-sided activity: it was something a candidate was noticed as actively doing but also as something that happened to them without them noticing (Bourdieu 1977). *Imitating* has long been well-theorized as a mode of learning (Gherardi 2009) recognizing people copy others in learning what to do and say. Imitating has been particularly important in the context of the university as an institution (Sieweke 2014) and in candidates' learning as illustrated further on.

A practice-based approach also recognized learning research as emergent, hence the concept of *incubating*. Learning to do research was shown to take time and occurred in very specific locations under very specific conditions. When asked what lessons had been learned after 6 months, Margarita (science) explained: *Make mistakes early on as later your supervisors expect you to know more, to be more independent*. Disciplinary understandings took time to develop and drew on candidates' pasts, presents, and futures. Candidates entered their current research program with appropriate disciplinary formation (their past qualifications) and progressed (in the present) within a field, which motivated them (their future). Practices were learned and perpetuated in relationships and contexts bound together over space and time, connected through histories of epistemic knowledge and the teleoaffectivity (motivational desires) of disciplinary scholars (Green 2009a; Schatzki 2006).

Learning Research Practices: A Look at the Data

Sociomaterial Aspects of Learning

The sociomaterial features of disciplinary settings played an important part in the frequency and kinds of opportunities candidates were afforded for participating (in activities). For example, the science and engineering candidates in the study had more opportunities to engage socially with others because of the collective working arrangements built into the nature of research in the discipline. Five of the six STEM (science, technology, engineering, and mathematics) candidates worked on joint projects in larger teams. Materially, their daily activities took place in laboratories and in seminars. Their knowing was fostered collectively, they were frequently co-located in space, and they spent time together sharing projects and experiments.

This relational base to their ways of working had an impact on reducing the isolation of these IHDR candidates. Candidates were integrated professionally, materially, and socially into the faculty. If one was in a team, one belonged voiced by one science supervisor: *Science is a team thing; we work in teams* – a feature of the discipline (natural sciences) connected to candidate retention (Spaulding and Rockinson-Szapkiw 2012). The team structure of Sophia's and Margarita's projects extended to regular seminars and meetings, based around their projects. Margarita was given the chance to chair a team meeting. She managed input from fellow candidates and supervisors as their reports were given in turn – a task delegated to her by her supervisor. Collaborative work and epistemic integration were a consequence of this

initiative. A further two candidates in the study, Samuel (science) was doing computational work on one project so was peripherally part of a project, but he participated in weekly team meetings with other science research candidates. Alsadi (engineering) was not in a team-based project initially but participated in weekly seminars and was soon to be joined by another doctoral student. Once the doctoral partner joined him, his confidence, socializing, and learning – *we can help each other* – transformed immediately. Alsadi had known the candidate from their masters' degree days, and they immediately began a supportive integrated work pattern that extended to problem-solving together and to their tutoring roles: *We're going to prepare for tutoring mat lab tomorrow afternoon, so we will be working together*…. Working together meant learning together.

This collective learning experience was not always a feature of the sciences as one candidate did not have a collective learning project. This was Narita, who sat alongside another doctoral candidate (who was nearing completion) for 4 months without a word exchanged between them. Narita's isolation was exacerbated as she worked alone on her microbiology samples for the full first year. Her supervisor was overseas for much of that time, and a promised "postdoc" coresearcher was not appointed. This isolation significantly impacted on her social and academic integration and consequently on her learning. *(I haven't been to any conferences) because everything has been delayed, I don't have results…and if I don't have results what I'm going to do there?* While her co-supervisor supported Narita, this co-supervisor was not able to write the laboratory protocol. In the end, being alone for this period of time held up Narita's learning as she worked in a vacuum without feedback and without peers recognizing her presence or actions. According to Hager and Johnsson, if others are not present, the social process of learning is hampered (2012).

The comparative isolation of the education and the health economics candidates on the other hand was reflected in the way they worked on their research question alone with their supervisors and/or supervisory panel. Both candidates were initially located in isolated settings, with only occasional interactions with peers and other supervisors. Rosemary was joined in her allocated sitting space later on by other research candidates, although her project was not connected to them. Renata was relocated to a faculty space in a restrictive environment (peers only) with no talk and no collegiate or faculty interaction. One education candidate in the precursor study shared how her supervisor had recognized the benefits of collective learning and its relational benefits even though this was not a typical disciplinary model. This supervisor required her candidates to participate in seminars where they *[had] to present*, and as a consequence, they were initiated into the practice of presenting, which they then perpetuated as a way of learning to do presentations:

> My supervisor had this idea. I don't know if people do it in [the other departments], but she used to hold meetings with all her students twice a month where we would **have to present** a research [paper], like in an informal setting, just to familiarise with the… [unclear] presentation and to share ideas and also to create that community of research… that was a very, very good idea and actually we students used it a couple of times before conferences for example. (Madeleina in Focus Group 3)

Renata (education) overcame the usual solitary work on a research question, which she achieved through her own agency, but it was an agency fostered by the supervisor's professional and caring supervision. Agency here is used in a common sense way as the capacity to enact or effect things in a given context, occasionally conceptualized as "confidence" (to do) (Edwards 2017, p. 135) as identified by the supervisor below. Renata's supervisor identified the relational component that enabled her to participate, an observation Renata concurred with:

> I think she felt supported . . .feeling supported has given her the confidence that she can be proactive . . .and I guess that it's a safe environment to be proactive and without my involvement and knowledge she's made friends with other research students. . ..

In both examples above, whether it was the supervisor or the candidate, a disciplinary paradigm of solitary learning was overturned by proactive supervision fostering actions and activities (participating) for IHDR candidates. In each initiative, participating in the research community (and learning practices) was enhanced.

Beyond the social aspects of learning, the materiality of different disciplines and its relationship to (re)producing knowledge impacted differentially on the IHDR candidates (Parry 2007). There were differences in how candidates were initiated into ways of seeing in the material sciences and in education, for example. Even though education and the material sciences both drew on rhetorical and material ways of seeing, the practices differed at a more fundamental level. In understanding the differences, the argument here draws on the works of Bernstein (1999), Maton (2010), and Knorr Cetina (1999). According to Maton, in the arts and humanities, "pedagogy [ ] initiates learners into ways of knowing rather than explicit states of knowledge" as it does in the sciences (2010, p. 171). Although Maton and Bernstein's work references *group* inclusion and exclusion and is based on curricula in school education, their theorizations are relevant here.

In the sciences, knowledge is based on "shared criteria" (Maton 2010). This creates a "vertical grammar" where one set of observations forms the basis largely in uncontested ways, for the next layer of knowledge. Ways of seeing are established through *shared observation*. If one shares knowledge, one is a (relatively uncontested) "knower." In the arts and humanities, knowledge has a "horizontal grammar," and "knowers" take a position on a horizontal plane – arguing a perspective – adopting "a gaze" not directly adding shared knowledge vertically as they might do in the sciences (Bernstein 1999). A "gaze" might be "acquired" by birth, social status, or training which Maton described as "born, social, cultivated and trained gazes" (Maton 2010, p. 165), each requiring a different membership facility. A gaze is a perspective, and to convey this viewpoint, candidates draw on argumentation and rhetorical know-how in English.

Thus, candidates in the material sciences were inducted into "ways of seeing" that were visual and material (based on observation), while those in education and health economics, with exceptions, were encouraged to look at their data from a predominantly rhetorically based perspective. Qualitative data were "seen"

metaphorically not observationally, whereas in the material sciences, "ways of seeing" were literal. Each discipline had its "different machineries of knowing" (Knorr Cetina 2007, p. 363).

Renata (education) was initiated into "seeing" that "knowers" on the topic in question – climate change – would not necessarily share the same perspective as each other. Her supervisor pointed this out early on in her candidature: *It would be useful to think about who the theorists are – educationalists, sociologists, psychologists, etc.* (Manidis and Goldsmith 2017, p. 8). Renata's supervisor suggested to her: *Establish clearly and early your orientation and perspective. . .establish where you're coming from, your epistemological position* – i.e., the "trained gaze[ ]" (Maton 2010, p. 165). This supervisor provided different readings to satisfy Renata's range of interests, permitting (encouraging?) different "gazes," long before (selected) data were collected.

On the other hand, Samuel (science) was initiated into seeing in a literal sense how knowledge could be (re)produced on the *observed* evidence. Examining computerized data with Samuel early in his candidature, his supervisor pointed out:

> . . .in the optical when you cut back the optical properties you should **see** a transition from there to there . . .so what I'm expecting. . ..and the main transitions will be across the band gap. . .so you'll **see** . . ..[. . .] go up there. . .but there'll also be a peak down here somewhere . . .. (Science supervisor) (Manidis and Goldsmith 2017, p. 8)

Although interpretation was involved, the supervisor explained how Samuel was being initiated into scientific ways of seeing (Perrotta 2013):

> [The candidate learns] how to interpret stuff. . .graphs and data. . .that's just the way we [scientists] work. . .that's the main skill we are trying to transfer is the ability to be able to interrogate data and **see** the important bits. (Science supervisor) (Manidis and Goldsmith 2017, p. 8)

These ways of seeing are recognized as impacting on learning in more substantive ways, although this was not observed in the early candidature setting of these studies' participants. For example, "extrinsic" and "intrinsic" differences between the epistemic knowledges of the sciences and the arts have been attributed to the relatively easier impact of some of the sciences on candidates' psychological equilibrium as it involves "objective phenomena which can be seen as being outside the individual" (Wright and Cochrane 2000, p. 192). Conversely, in the arts, subjectivity, emotional maturity, and judgment have been required for navigating its ways of knowing, and this internal focus has been considered in earlier studies as having the potential to impact adversely on candidates with them requiring more support at particular times in their candidatures (ibid).

Embodied Aspects of Learning

All research practices are embodied and material (Hopwood and Paulson 2011) but, in the sciences and engineering, greater involvement in practices such as laboratory

work, provided *earlier* formative opportunities for IHDR candidates to participate in learning research practices than those afforded to the humanities candidates. An exception in the arts and humanities may be found in a creative arts degree where candidates may be writing books and producing films or artworks early in their candidatures.

Laboratory work enabled earlier opportunities for the science and engineering candidates to participate in and develop "practical understandings" (Schatzki 2009, p. 117). Janita's engineering supervisor utilized early laboratory work on a related project – a frequent practice of his – to "orient" her to the learning environment before she began her own project. In his words, this familiarized her with the setting and gave her in*sight* and confidence to proceed: *You can't make a blind person independent*. Referring to blindness metaphorically, he felt he was developing her independence through contextual awareness. While it would be fair to say that laboratory work might only be a part of a science and engineering academic or work life once they graduate, in the study this early embodied opportunity played a part in providing an expedited way of involving the science and engineering candidates early on in (re)producing knowledge.

Observing Margarita (science) as she examined the impact of heat on her materials in the vacuum oven in the laboratory she was enacting an embodied practice, working with data early on in her candidature:

> Now I see it – there was nothing there before. . .I need to look at my previous [notes]. . .you don't need to remember [leafing through her notebook]. (Margarita)

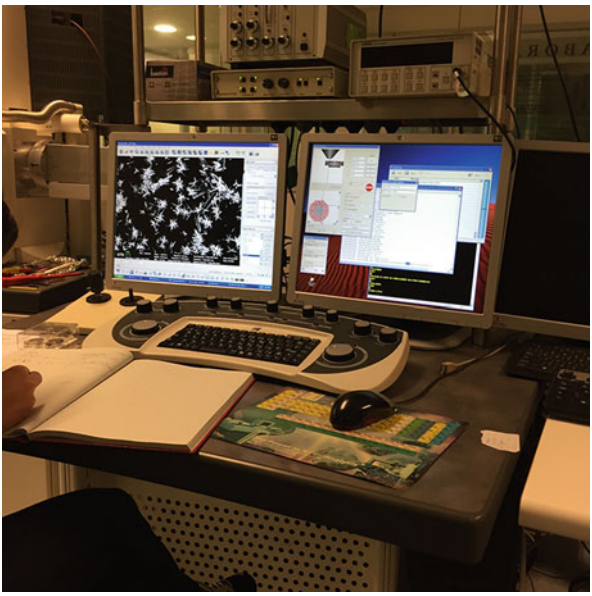
Sophia too spent time looking at nano-samples on her computer screen. As she did so, she magnified the focus on her equipment. She looked for a number on the sample, found it, magnified it, focused, zoomed in, selected a spot, made a note, focused, contrasted, zoomed in again, focused, took a "photo," saved the "photo," typed, then zoomed in again, focused, contrasted – all visual hand-eye coordination – and took another "photo." She moved between the iPhone, pen, book, computer controls, screen levers, and computer mouse controls – the artifacts of her discipline – constantly; she notated again, moved the mouse, typed, made a mistake, refocused, and recalibrated.

> It's easier if you're just watching but it's different, better to do it yourself. . .if you didn't feel confident. . . .

> I haven't seen it before [these shadows]. . . .

Sophia re-snapped the "photo" mumbled *humph*, saved the file, returned to the notebook, and zoomed out. These *humphs* confirmed patterns she was looking for and ones that could be detected with the naked eye. She had been initiated (enrolled) into the practices of looking for and seeing them (Photograph 1).

Sophia constantly watched and worked from the visual "seeing," using an embodied process to make sense of what was going on. The formative learning



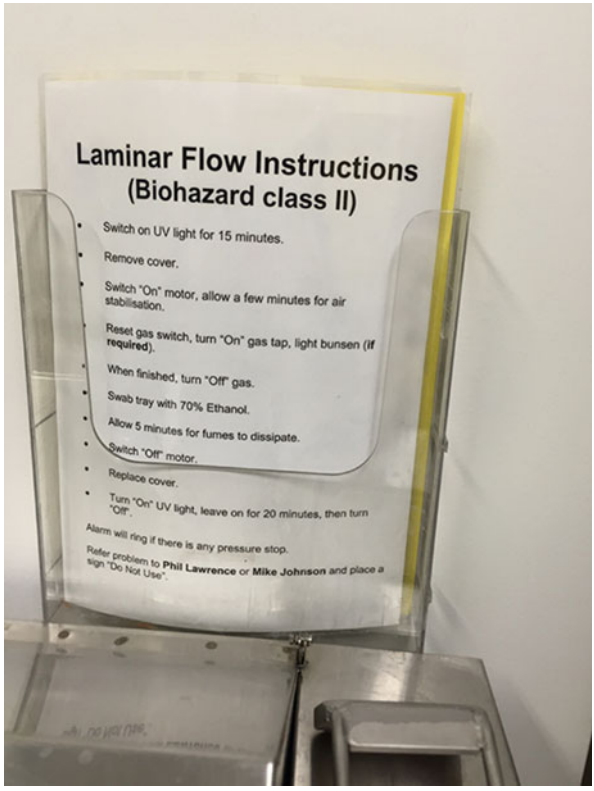
Photograph 1 "Seeing" the data – visuals and written notes, computer screens

of enacting the embodied practice in physics enabled her to participate in and engage in collective doings that "form the 'machinery of knowledge construction'" which in physics (for Sophia) "make up how we know what we know" (Knorr Cetina 1999, p. 1). As Sophia participated in these epistemic practices, it was possible to study these as "situated processes of knowledge production…" (Perrotta 2013, p. 164).

There was no opportunity to observe the two non-STEM candidates in this kind of early involvement in data. While all research learning is embodied, disciplinary contexts make a difference to the pace of learning. This is particularly pertinent in the doctoral undertaking – where embodied practices lead the way into the murkiness of "becoming" as candidates experiment, try out, try on, originate, and speculate in their fields of study. Embodied practices plus the protocols of scientific and engineering practices also rendered knowledge as collectively explicit and visible. Narita followed protocols relating to the location and bearing of her researcher body. For example, Narita washed her hands after being in the laboratory, following the protocols. Another protocol – a list of "dos" and "don'ts" – about what was required when working with active agents and cells was written out and was very visible (Photograph 2).

Narita also followed protocols in her dress and was attired in specific ways, months before any results were forthcoming. She donned the apron, the gloves, and the covered shoes. From very early on in the candidature, Narita "looked" like a scientist. This embodiment had a social benefit, as it indicated recognizable membership of a community and "presentation of self" (Goffman 1959) (Photograph 3).

As scientific knowledge is based on "shared criteria" (Maton 2010), Sophia and other candidates in the cohort of IHDR candidates could access this shared



Photograph 2 Local learning aimed at the collective

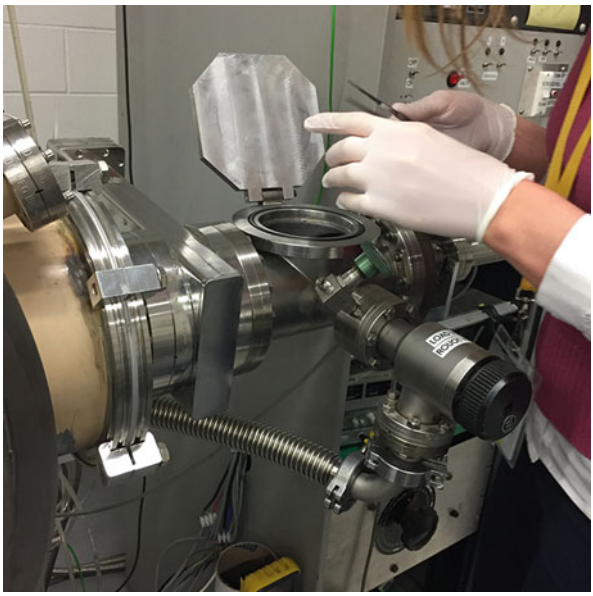
knowledge in other languages. Making use of "translanguaging" (Garcia and Wei 2014) and technologies, Margarita read a Russian textbook online – both activities enabling her to reach "wider networks of knowledge" (Nerland 2012, p. 4). When Sophia was surprised by what Margarita was reading online, Margarita reassured her saying: *Yes because Russian books are very good, they explain more.* The shared materiality of science and engineering knowledge, and the capacity for knowledge itself to be decontextualized and recontextualized in information networks (Collier and Ong 2005) enabled Margarita to participate in a proactive way. Of course, accessing "wider networks of knowledge" could also be replicated in an education or arts-based project.

Even though science candidates might be stream-based, once in a stream, "knowers" still share criteria (Maton 2010) as claims on truth are made on available (and frequently immediate) data evidenced by what scientists collectively *observe* and understand. The relatively "non"material nature of the education and health economics candidates' projects meant they required more time to develop their "gaze" and took even longer to learn to communicate this drawing on advanced rhetorical know-how. The difficulties of developing a specific gaze were reflected in the wide coverage of Renata's and Rosemary's literature reviews, both of which required extensive reading and discussion.

Photograph 3 Protecting Narita's body in the microbiology laboratory

Learning to write in all disciplines in a specific way is essential to membership, identity development, and research degree accomplishment. Learning the discursive and rhetorical aspects of writing (and speaking) in the non-sciences – where learners seek to acquire a cultivated gaze – is consequently less straightforward than in the sciences (Manidis and Addo 2017). For IHDR candidates who have English as an additional language, developing in this area is even more time-consuming, difficult, and extensive than for candidates whose first language is English (Paltridge and Starfield 2007). For Sophia, Margarita, and Samuel, the scientifically theoretical focuses of their projects were less refracted. Generally, in the sciences the more linear structure of the dissertation with an introduction, methods, results, and discussion (IMRD) sequence of chapters reflects this shared logic and understanding.

The materiality of science and engineering (Photograph 4) facilitated early participating as actions and activities were more immediate and more embodied than those undertaken by the study's education and health economics candidates. This embodied learning in science and engineering provided an immediate connection with learning, not experienced by these and other humanities candidates as early in their candidatures (not counting candidates who might have required similar embodied activities in the creative arts, which the study did not include). The only performative opportunities afforded to the education and health economics



Photograph 4 Learning eye-hand coordination by doing

candidates were to deliver a presentation, but this did not happen until one would be halfway through her candidature and the other was at the end of the first year.

Narita (science), Margarita (science), Sophia (science), and Janita (engineering) progressively developed eye-hand coordination. Janita held the bottle of her samples delicately and then worked the pipette with the other hand. Margarita used dials and inserted samples into specific equipment. Narita used droppers to move liquids into containers. Sophia calibrated visual images with levers as outlined earlier. These were not usual, mundane movements. Rather they were specialized scientific procedures drawing on "practical understandings" (Schatzki 2009, p. 117). The body was a key "tool" in the learning. But learning also required an understanding of how the knowledge in the discipline was (re)produced. Margarita observed: *It's not so hard to train on the instruments – it's more difficult to understand what is happening atomically.*

The material (re)production of scientific knowledge had pedagogical benefits too. Janita (engineering) and Margarita and Narita (science) obtained "lab" supervision work in the first 6 months of their candidatures. They undertook laboratory tutoring where they carried out basic instruction to undergraduate students. This activity initiated them into an academic practice of teaching. This level of academic teaching was not available to the education and health economics candidates. In general terms in the non-sciences, unless a candidate was already experienced in a subject area with extensive theoretical knowledge, they would not be in a position to do tutoring or lecturing. Some candidates in the arts and humanities might undertake tutoring, but opportunities were not as plentiful as laboratory tutoring ones. The practical nature of laboratory work in the sciences rendered these disciplines as a ready, situated pedagogic platform.

In summary, the epistemic site of a discipline offered different opportunities for participating. Although there were evidently theoretical differences in the science and engineering disciplines, "knowers" shared criteria which had a consequential relational impact on how they worked.

Being Assisted to Learn Research Practices

What Supervisors Did

A key finding of the research was that while learning is understood to be a social and a material process, for both IHDR and domestic candidates, participating was essential, but the *relational* component of learning, while important for all candidates, was particularly so for IHDR candidates. It was evident that they faced additional challenges such as linguistic, cultural, and social dissimilarity from their domestic counterparts: for them, the rules of participating were more opaque than for domestic candidates.

It is already well-documented that the social situates the relational component of learning as central to any pedagogy (Cook and Brown 1999; Gergen 2009; Hager and Johnsson 2012; Lave and Wenger 1991). This was extensively illustrated in the data, with findings showing that experienced supervisors of IHDR candidates understood it was *essential* for this cohort of students to be integrated into social and academic networks in supportive ways. Three supervisors explained this concern in relation to their candidates:

> I watch quite closely 'cos' I know that once they get connected I can tick a box, step back. (Science supervisor)

> You take a little more time to see that they're interacting with others – you don't want them to get isolated. (Science supervisor)

> [I] make sure they are on all the mailing lists etc. (Science supervisor)

> [We] have more frequent meetings just in the beginning [of their candidature] because they've moved from another country just to make sure that they're settling in and that they haven't got problems around accommodation or support. (Health Economics supervisor)

The relational and professional practice underpinning these activities was significant as both these supervisors displayed professionalism and caring. "Care" by these supervisors might be "framed as a collective knowledgeable 'doing' [of all teaching professionals], [care] is not an object or a quality that is added to work; rather, it is 'caring', an ongoing sociomaterial accomplishment" (Gherardi and Rodeschini 2015, p. 266).

Different "care" was extended by another supervisor (science) who organized his candidates and *their issues* into standard computer folders as follows:

- Progress and issues
- Computer "lab"/desk access
- Applications
- Scholarship
- Progress review
- Conferences
- "Lit" review
- Papers
- Sources
- Thesis
- Career

. . .and eventually they graduate from candidates into real people [chuckle]. (Science supervisor)

The supervisor's final comment on candidates becoming real people, although lighthearted, was a development the supervisor took seriously. He keeps in touch with these "real" former graduates, offering them ongoing support with references and sustaining links with them in their new workplaces. The university, the supervisor, and the IHDR candidates all benefit from this extended relational and now new knowledge network.

The relational aspect of supervision extended to ways supervisors related to their disciplinary knowledges. A practice-based approach recognizes practices are sustained through discursive and aesthetic attachments (Gherardi and Strati 2012) (see below). Academic practitioners – supervisors – talked about, and were attached to, their disciplines and professions as HE educators. Schatzki describes these as "teleoaffective" underpinnings incorporating motivations and goals related to the practice (Schatzki 2006) – of being a scientist and of being an academic. Candidates could thus be progressively initiated into ways of seeing in their disciplines, the language of their disciplines, the language of aesthetics, and the language of critique.

Supervisors thus played a significant role in initiating candidates into the excitement and pleasure of learning and aesthetics as a component of learning. Doing this could be considered one of the ways supervisors "mobilize passion" (Gherardi 2009, p. 544) for the object [of study]. This may be considered as "intuitive knowledge" (ibid.) – it is a "non-rational but emotional way in which knowledge is transmitted through evocative, expressive modalities. . ." (Gherardi 2009, p. 546). In doing this for or with the student, "at the same time [the supervisors] construct a vocabulary with which to speak about taste, to share an experience, and to refine the taste of the practice intersubjectively" (Gherardi 2009, p. 546).

Experienced supervisors across disciplines understood the need to instill in their PhD candidates the aesthetics of their disciplines, initiating them into respective epistemic ways of making choices and working. One science supervisor in the study recognized his candidates' need to develop their own passion in learning, and he cultivated this actively in their first year of candidature:

The first year I think I cut them a bit of slack and let them – like take some deviations from – let them explore – it's not my project – it's to instil that **feeling** [in them] that this is my

> [the candidate's] project and I can take this where I want it – so they're coming to you [saying] 'These are the measurements I've done and this is my plan. . .' I think it's a better experience for them and it's much more **enjoyable**. . . .

Rosemary's panel of supervisors (health economics) gave her an opportunity to set specific objectives for her candidature. They asked her if she wanted to acquire the skills of actually *doing* a systematic literature review or whether she wanted to *critique what is being done in which case you'd say, for example, are there systematic reviews in this area, what's the level of evidence, [and so on]?* In other words they gave her the option of doing a systematic literature review of the topic area (as the primary thesis) or undertaking a literature review of her subject area to support her thesis topic. This choice fostered ownership of the study as *Rosemary's project* similar to the decision made by the supervisor above.

(Re)producing knowledge together is another powerful way of enabling participation by candidates. Samuel's supervisor (science) indicated that he and Samuel

> are going to write a paper together soon as [Samuel's] already got some **nice** results – that follows on from work we published last year that he wasn't involved with but I got him to do some extension work on that. . .[we had it published]. . .and I helped him write that up. . . .

The aesthetics of disciplinary knowledge were conveyed overtly too. Looking at a screenshot of nano-samples with Sophia, her science supervisor commented: *I like it*, expressing what he felt as well as transmitting what good samples might "look like." This initiated Sophia into an emotional and visual experience of the knowledge and learning, based on shared criteria. Another science supervisor asked Margarita in a supervisory meeting: *Do you remember what they [the results] showed? How did you **feel** about the results?* The relational aspects of these sayings, seeings, and doings were once again paramount – ways supervisors related to disciplinary knowledge and learning these aesthetics were shared with the candidate.

What Candidates Did

Candidates themselves were proactive in participating by taking part in a faculty/activity or a social/work group. Margarita joined the basketball team, made friends, and got fit: *See I'm becoming social now. . .I'm doing this [playing basketball] instead of the PhD!*

Imitating was a key component of the collective learning that was observed. All candidates imitated the sedentary mode of academic work. When not in the laboratory or elsewhere, candidates transformed into focused, quiet, sedentary desk workers – enacting a collective, embodied practice. Doing deskwork was the thing to do as a burgeoning academic – both in its material and spatial connection to computer-based reading and writing and in its social teleology – it was one of the ways to become an academic (Photograph 5).

Photograph 5 Alsadi imitating learning practices

The corporeal presence – of turning up, sitting at desks, working in the laboratory – was a way of going on, of being there and even performing PhDness, '[a]cademic study [ ] itself a bodily practice' (Hopwood and Paulson 2011, p. 674). Candidates were going through the (bodily) motions until they engaged with the intellectuality of the enterprise. Using their bodies in this way could be understood as seeing "the body as body subject" (Keat 1982) – a body that is purposive and professional and is attaining its individual "habitus" (Bourdieu 1986). These bodies were attuned, active, and orienting to their surroundings as candidates oriented to "becoming doctor" (Vagle 2015, p. 9).

Bourdieu expounded the essential components of habitus were "transmitted in practice, [. . .] without attaining the level of discourse" (Bourdieu 1977, p. 87). While Bourdieu's theorizations focus more on the individuality of practices than their collective nature (Schatzki 1997), the relational, aesthetic, and taste aspects of *imitating* are recognized as essentially collective (Gherardi 2009). Candidates wanted to be like their supervisors or their peers. Margarita articulated this desire as she listened to feedback in the presence of her peers at the group meeting: *When you hear yourself and see reactions [in the team meeting] you can move in the right direction.*

As some of the research candidates were seeking to "become" academics, the attraction, the aesthetic, and the desirability of mimesis, what Bourdieu originally termed *imitating*, could be regarded as powerful (Bourdieu 1977). Candidates admired their supervisors, confirming there was an element of prestige in imitating others particularly those whose actions "[had] succeeded and which he [the actor had] seen successfully performed by people in whom he ha[d] confidence and who [had] authority over him" (Mauss 1973, p. 3). In the sciences in Australia, the lower

numbers of junior women in the discipline are attributed to the "lack of female role models, mentors and [respectively gendered] networks" (Bell 2010, p. 440). For junior female scientists, there are fewer women predecessors to imitate – although the percentage of women in this study's sample contradicted that trend.

Sophia and Margarita imitated the local methods of recording data in their science faculty. They, like all research students in the faculty, were given the same red notebook in which they recorded their observations, sample details, and other notes. The books were an artifact reflecting "a set of investigative processes" of how scientists studied the natural world (Nerland 2012, p. 2): their collective way of (re)producing knowledge. The notebooks, as a material artifact, carried a social value, as everyone owned one (Photograph 6).

The study's IHDR candidates instituted "work arounds" and came to terms with the "accidental pedagogy" (Ward 2013) of the PhD candidature. Candidates and supervisors adjusted to one another, making allowances for illnesses, busyness, absences, forgetfulness, and disorganization. In these instances, supplementary activities filled the gaps in the flow of events. Narita attended a *development workshop* where she was told to *talk to others*; Margarita was advised to email three people on her supervisory panel rather than one busy supervisor; she discovered there were social benefits going to lunch informally with the "postdoc" researcher: *he is different outside the "lab."* Narita realized she was becoming more social and, when asked if this was helping, replied: *Yes because you realise you are not alone*; she developed patience until her supervisor returned from overseas. Alsadi contacted the author of a journal article (advice he received while attending a workshop) as he was having trouble understanding her paper.

Photograph 6 Imitating recording practices: the little red notebook of the science candidate

He and the writer began communicating regularly until Alsadi was invited to attend her university in Italy for 6 months to work with her.

One candidate, who will remain anonymous, did not participate in activities like other participants. Despite enrolling in several researcher development workshops, this candidate did not "turn up" on the day and struggled to deliver a team presentation when called on to do so. While the candidate made satisfactory progress on reading and experimenting, when it came to presenting – in an embodied performative way – the presentation, in practice, was not accomplished. The candidate's talk was barely audible and it lacked cohesion. This undermined the performative aspects of the presentation as knowing in a socially recognized way – presenting an academic paper (Manidis and Addo 2017). However, in participating, a requirement of the faculty, the candidate saw the experience as formative and would make adjustments the next time round.

On the other hand, Janita (engineering) attended a range of workshops on researcher skill development, participated in the 3-min thesis competition (University of Queensland 2008) in her faculty, and won the competition. Janita delivered a fluent, coherent, graphically illustrated (science-specific), and learned talk. The comparison here is evidently more complex than attributing Janita's success to attending particular workshops. But she prepared the talk, received feedback on it, practiced it, and then delivered it. The social, academic, and networking benefits of participating in a range of activities, especially being a part of the *3MT*® competition and winning it, made a difference to Janita's academic integration and research learning. Over 30 faculty members – supervisors and peers – watched her presentation, and she progressed, literally, to the next stage. Her primary supervisor advised that Janita did not want to take part initially but did so on his encouragement – a pedagogical initiative that yielded a high return for her (and for him). The words of Boud and Hager (2012, p. 26) underline the importance of the participatory benefits afforded by Janita's (and the anonymous candidate's) respective pathways to their presentation events:

> These practices involve the practitioner operating in complex ways, often with others, in a particular environment that has attributes of its own. It is only this relational combination that reflects the practice, and it is the practice itself that ultimately matters in terms of getting things done in the world. It does not matter what the professional knows or can do if this is not deployed appropriately in a particular context with requisite others.

Long before the IHDR candidates were making the intellectual leaps of their unique contributions to knowledge, their embodied practices were being enacted collectively – from day 1. Hager and Johnsson identify collective learning as going "beyond participation to include judgement; [collective learning] requires an embodied, committed form of relational responsivity that implicates others who must be similarly committed" (2012, p. 262). Whether candidates were becoming used to sitting at their desks, quietly working, practicing with pipettes and samples in the laboratory, reading journal articles, or showing up at seminars, in all of these arenas they practiced with were guided (and led) by their bodies – its performativity – in the endeavors of research study *from* and *with others*.

Discussing the Findings

The data illustrate that governance and supervisory arrangements were "inextricably linked" with "doctoral arrangements" and "with learning…" (Cullen et al. 1994, p. 41). Local practices in turn were linked to wider "nexuses" of practice (Schatzki 2001) such as those of the faculty and the university, and they in turn were linked to those of national policy and research funders' priorities.

At the local-level supervisors, "peers, postdocs and technicians" (Cumming 2007, p. 25) were among the "constellation of others" (Cullen et al. 1994, p. 41) engaged in assisting the candidates in their research learning. IHDR candidates themselves were also central to the immediate social makeup of their disciplinary setting as discussed, through their own agency and experiences.

Materially, aspects of the disciplinary learning environments focused on in the observations included equipment, bodies, artifacts, facilities and technologies of the disciplines, space and time, and the material nature of the epistemic knowledges in question. Specific material aspects included technologies linking candidates to the outside world – inter alia – such as global libraries and scientific resources, in one case a supercomputer and the synchrotron.

The sociomaterial and embodied instantiations of candidates' and supervisors' actions outlined above reflect how knowledge was being (re)produced in situ. On a social level, all the candidates worked closely with their supervisors or supervisory panels – except the one who was overseas – with candidates in their cohort and with others. They worked either in teams on projects or alone and experienced varied social and/or knowledge connections networking with those in their discipline, their immediate vicinity, and beyond.

The material arrangements for Sophia, Janita, Margarita, Samuel, Alsadi, and Narita, in their laboratories, were replete with samples, equipment, bodies, chemicals, and organisms. These and their bodies combined in particular actions and activities and constituted the artifacts and practices of science and engineering. They worked with these "things" running experiments, dressing like scientists, and recording their data in similar ways – enacting collective practices. They used computers, read widely, and attended faculty and university workshops.

Renata and Rosemary in education and health economics had fewer disciplinary identifiers and artifacts than their science and engineering counterparts. Nevertheless they too used computers, predominantly read widely in their first year, and also attended faculty and university workshops. They and their supervisors generated social and academic activities typically not afforded by their disciplines. Renata joined a committee organizing a research conference and volunteered to present her work at a faculty conference, and Rosemary lunched weekly with other candidates in her faculty and also attended weekly seminars, which were compulsory. These gatherings significantly reduced her initial isolation. In Rosemary's faculty IHDR (and all), candidates were considered as essential to the research endeavors and outputs of the unit – and candidates were accorded commensurate status. This social and academic inclusion ensured Rosemary was supported throughout this time although her supervisor was also overseas for the first 6 months of her

candidature like Narita's. In her absence, the supervisory panel took responsibility for her progress.

In the caring (Gherardi and Rodeschini 2015) of proactive supervisory practices, through activities and actions, IHDR candidates were integrated and initiated into practices they could then imitate. This was evident in the examples above where special inclusions were made for the IHDR candidates such as ensuring they were part of social and academic networks. Where the IHDR candidates were treated as unique – not in a deficit way but in a practical sense – and adjustments were made, this was beneficial to that candidate.

Margarita's supervisor claimed he didn't think about international candidates as "different," yet his actions belied this as he assisted Margarita on many occasions with language. Using the expression *off the hook*, he then asked her if she knew what that meant. Then when he added *we are on the same page there* he rephrased to say *we are thinking the same way there.* At one point he provided cultural advice:

> if you're unhappy about anything in the team mode you must speak out immediately it's no good being cross with [supervisor] or me or [other supervisor] – just tell us – we are big men, we can handle it – if you are concerned about something, just speak out – this is Australia – you can speak out – everybody speaks out loudly – you can speak out loudly too. . . .

Where candidates and supervisors were in proactive and collective learning patterns, participating, changing – learning? – were facilitated. Margarita reflected: *I think that I would need to change* after her supervisor gave her feedback. Rosemary's supervisor requested a summary from her about what she had understood from their preceding discussion; both she and her supervisor were constantly calibrating key aspects of her thesis. Margarita talked about benefits of attending group meetings: *When I listen to [my supervisor's] corrections I can take something from that*.

Where candidates were initiated into the disciplinary practices, they could soon imitate these. Margarita's postdoc supervisor in the laboratory pointed out to her "See it's more green – we need to measure thickness. . .," initiating her into the visual practice, subsequent action and the capacity to make new connections in her doings. Where this did not occur, trial and error took place, also useful for progressing, but potentially more time-consuming as Sophia explained: *I marked it with a pen so I know what sample it is. I think this is the hardest part for me to find my marks. Is there a way to do it, I don't know?*

Where candidates were initiated into the discursive practices of their disciplines, they were able to start using new language and disciplinary rhetoric. In a supervisory discussion early on in her candidature, Renata's supervisor questioned: *What are you going to call this thing?* Then she gave her the actual wording: *I'm going to invent. . .that will be my contribution*. The supervisor first introduced the idea of the concept and then used specific wording Renata could use. Where candidates were not initiated into specific ways of seeing, doing, being, and relating in their discipline, they did not always know how to go on. Should they read first and then do experiments, or should they do experiments and then read? What would be the best

order to do things? Or should they do these simultaneously? Margarita relayed what her "postdoc" supervisor advised after she had spent her initial days in the laboratory: *An hour in the library can save you 6 months in the "lab."* The complexity of research learning was reflected in these comments: listening to those who know more (the "postdoc"), finding out the best way to sequence tasks, considering whether to precede material knowledge with reading or *vice versa*, juggling time and tasks, and, finally, becoming aware of the emergence (and multiplicity) of knowing in different ways.

Where proactive supervisory practices did not occur, candidates (and their learning) were negatively affected – as with Narita whose supervisor traveled overseas, while she was left to her own devices. She waited for the supervisor to return and write the laboratory protocol, and it held her up by several months. She finally sought counseling and external assistance but lost 6 months of her candidacy – while on a time-bound scholarship. *I'm very worried; I'm international student, if I don't finish on time, I can't finish. . .I'm very worried that [getting the faculty to intervene] will affect my relationship with my supervisor.*

Candidates felt more secure in their learning when supervisors responded to candidate requests, meetings, and other concerns. When this was not the case, the reverse happened. Margarita emailed all three people on her supervisory panel hoping someone would answer: *One of them will respond*, she told the researcher. This kind of responsiveness by candidates to particularities of their supervisory circumstances indicated how they were progressively learning to adapt to in situ social and material contingencies. Janita (engineering) demonstrated how she could tailor her knowledge to different audiences. She recognized her primary supervisor was the one who was negotiating her project at the strategic/funding level; her "postdoc" supervisor was closely monitoring (and wanted to be updated on) the details of her sampling and findings, while her overseas supervisor brought a European perspective to his discussions with her. Each time she prepared to talk to one of them, she ensured she had the right information for *that* supervisor's expertise and interest.

By the end of the first year, candidates were able to demonstrate epistemic and research learning in a collective practice. Seven of the eight (the remaining one candidate is yet to do so) candidates in the study submitted their finalized research stage 1 (Confirmation of Candidature) papers in disciplinarily appropriate proposals and formats. Through participating, these presentations were the outcomes of their integration, initiation, imitation, incubation, and more. These candidates had participated in doings, seeings, sayings, and relatings in their disciplines – to a greater or lesser extent – attuning to what was required, participating, and learning. It was not just one action, activity, person, or material thing that had brought them to this juncture. Rather it was the textured praxis – intelligible actions and activities unfolding with regularity and familiarity, in situ, making up the practices of the discipline – that had enabled them to accomplish stage 1 completion (Manidis and Addo 2017).

Concluding Comments

The IHDR candidates are in an international and national policy environment that is characterized by increasingly competitive exigencies. IHDR candidates are also in localized and disciplinary learning environments, where research learning is enabled by some epistemic traditions but also by the relational and embodied components of pedagogy. Candidates benefitted from their own and supervisor-led initiatives even though their participation was affected by sociomaterial and embodied aspects that were contextual and disciplinary.

The data also showed candidates' doings, seeings, sayings, and relatings – their practices (Green 2009b; Kemmis et al. 2014) – were responsive to the temporal, spatial, social, and material dimensions of their disciplinary settings, and beyond. In this, the learning ecosystem has been shown to be simultaneously complex and fragile, harboring multiple and shifting combinations of supervisory and support practices, disciplinary variations, and different sociomaterialities. IHDR candidates experienced the university landscape in unique ways particularly its "spatial and temporal properties" (Schatzki 2011, p. 70). IHDR candidates were very aware of their need to connect to others, particularly their supervisors. Candidates were acutely aware of their supervisors' whereabouts, including when they were on holiday, unwell, or at conferences. Margarita reported: *I know he [my supervisor] has coffee at 9am and goes home at 6pm.* Despite efforts to lessen dependency on supervisors – all candidates, without exception, saw their learning as intimately tied to their supervisors – and even in the context of their own agency, Narita (science) still continued to see her supervisor as the expert:

> I do lots of pre reading before I go there. . ..[supervisory meetings]. . .I prepare everything. . .by the time I get there I just ask the specific questions that I have [I learn] many technical things that I don't know myself. . .you know she's the expert. . . .

Pressures, pathways, and practices were not always consciously understood. Supervisors enacted practices based on disciplinary modes of working and on their own understandings of how they imagined learning happened for their PhD candidates. In this way practices became localized and embedded in what they or others in their faculty did (Boud and Brew 2017). Whether it was the supervisor who "cut his candidates a lot of slack" so they would get to enjoy their studies, or one who screened them carefully before admitting them, or another who saw learning as embedded in discursive exchanges through texts and talk, each did what he or she believed would lead to a successful candidature.

Learning has been shown as a multifaceted process at the heart of which are relational knowing and professional care by supervisors. Professional care could be considered a key *practice* of professional higher education educators (Green 2009a). They are motivated by long-held teleologies of tertiary pedagogy reflecting concomitant dispositions, values, and ethics (Green 2009a). Enacting these made a positive difference to this IHDR cohort's learning. The agency of candidates

themselves played a crucial role in their learning. Those candidates, who were proactive in joining sports groups, turning up for workshops, taking part in committees, and preparing for supervisory meetings, further enabled their own learning. Drawing on their multilingual and international connectivity – proactively translanguaging and networking internationally – they enhanced their spatiotemporal learning.

Various epistemic knowledges facilitated or constrained participatory opportunities for candidates, as disciplinary practices impacted on candidates' learning. The social nature of science, its material features, and embodied practices fostered participating, hence early research learning. Visible and intellectual membership and consequently engagement for first year IHDRs in the sciences and engineering and in project-based doctorates took place early on in the candidature. The reverse was the case for the health economics and education candidates. In education, Renata worked alone more often – although this happened in the sciences too to Narita – and Rosemary and Renata had fewer opportunities to engage materially and in embodied ways with the discipline early on in their candidature: it was taking longer to cultivate their theoretical "gaze." The latter process differentiated/isolated them from those with different theoretical perspectives – hence from broader social or interdisciplinary collegiality. Renata, whose co-supervisor was from another discipline to her primary supervisor, identified the theoretical distances between perspectives alerting her to the need to fine-tune her theoretical perspective:

> Then I had a question around social practice theory. I guess there's not just not one practice theory. . . there's many different practice theories and so I was interested in where you situate yourself in that space [ ] and there's a lot of other perspectives [ ] that you could draw on. . .. so [ ] I'm sort of interested in what you're drawing on there. . ..

Participating broadly and proactively in activities (of knowledge building) has been identified as the basis of first year IHDR research learning, facilitated through agency by candidates and proactive relational and professional "care" (Gherardi and Rodeschini 2015; James and Baldwin 1999; Jones 2013; Noddings 2003) by supervisors and others. Participating was also facilitated or hindered by the social, material, and embodied features of disciplinary knowledges.

The challenge for faculties, supervisors, and candidates is to maximize the relational and material aspects of IHDR participation in every disciplinary setting and at every opportunity. Relationally, collective learning arrangements and engaging with others early on foster participation. Materially, streamlining access to laboratories, engaging with data early on, and considering other physical arrangements – even seating – can foster participation. Learning proceeds (or not) amidst what candidates do, what supervisors do, and what faculty members responsible for professional learning and leading and researching in the faculty do – and how these connect to each other can either increase or limit candidates' participation. And as illustrated, participating is essential because "[l]earning is directly implicated in practice, and learning can be represented as an outcome of participating in practice" (Boud and Hager 2012, p. 23).

In seeking to understand in situ learning of first year international research candidates, pressures, pathways, and practices have been shown to intersect continually as the analysis of the data showed. Their confluence is evident in the context of increasingly competitive, global research pressures. As one science supervisor said when asked how he thought "learning happened" for his higher-degree research candidates:

> It's different . . . in every circumstance – there's no single answer to that. For us we've tried to set up a system where we have open discussions about scientific work. . .within our group – in that group there's probably four or five academics and probably 20 PhD students, and in that group we try and generate through Journal Clubs and so forth an ongoing scientific discussion. . .particularly around taking what we see – as academics – absolutely exemplary pieces of research work in the literature – get them to read it, understand it, dissect it – get them to see how – not really how the research work is done – we sort of teach them [that] the nuts and bolts of research – but the other part of that, the really tricky part of that, about, the communication of that research to the broader audience – which is **really** hard and **really**, **really** important – how to write a paper, and construct a scientific paper that is going to get in the absolutely top journals. . ..(partly reproduced in Manidis and Goldsmith 2017, p. 10)

Amidst the pressure of today's international research pathways, learning to do/knowing research in practice – as practice – has become a communicative imperative. Articulating research impact is now the priority.

References

Bell, S. 2010. Women in science: Lessons from Australia. *International Journal of Gender, Science and Technology* 2 (2): 438–452.

Bernstein, B. 1999. Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education* 20 (2): 157–173.

Boud, D., and A. Brew. 2017. Learning to teach as development of practice. In *Theorising Learning to Teach in Higher Education*, ed. B. Leibowitz, V. Bozalek, & P. Kahn, 77-92. Abingdon: Routledge.

Boud, D., and P. Hager. 2012. Re-thinking continuing professional development through changing metaphors and location in professional practices. *Studies in Continuing Education* 34 (1): 17–30.

Bourdieu, P. 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.

Bourdieu, P. 1986. Habitus, code and codification. *Actes De La Recherche En Sciences Sociales* 64: 40–44.

Brown, J., ed. 2014. *Navigating international academia: Research student narratives*. The Netherlands: Sense Publishers.

CAPA (Council of Australian Postgraduate Associations). 2012. *The research education experience: Investigating higher degree by research candidates' experience in Australian universities*. Canberra: Commonwealth of Australia.

Collier, S.J., and A. Ong. 2005. Global assemblages, anthropological problems. In *Global assemblages, technology, politics and ethics as anthropological problems*, ed. S.J. Collier and A. Ong, 3–21. Oxford: Blackwell Publishing.

Commonwealth of Australia. 2016. *Education services for verseas Students Act 2000*. Commonwealth of Australia. http://www.legislation.gov.au/, viewed Act No. 164 of 2000. Accessed 6 May 2016.

Cook, J., and S. Brown. 1999. Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. *Organization Science* 10 (4): 381–400.
Cullen, D.J., M. Pearson, L.J. Saha, and R.H. Spear. 1994. *Establishing effective PhD supervision*. Canberra: Australian Government Publishing Service.
Cumming, J. 2007. *Representing the complexity, diversity and particularity of the doctoral enterprise in Australia*. Canberra: Australian National University.
de Souza Bispo, M. 2015. Methodological reflections on practice-based research in organization studies. *Brazilian Administration Review* 12 (3), Art. 5: 309–323.
DIISRTE. 2012. *Australian innovation system report*. Canberra: Department of Industry, Innovation, Science, Research and Tertiary Education.
Edwards, A. 2017. Cultural-Historical approaches to teaching and learning in higher education: Teaching to support student agency. In *Theorising Learning to Teach in Higher Education*, ed. B. Leibowitz, V. Bozalek, & P. Kahn, 124-138. Abingdon: Routledge.
EHEA. 2010. *The Bologna process, European Higher Education Area*. European Higher Education Area. http://www.ehea.info/, viewed 18 Feb 2016.
Felt, U., J. Igelsbock, A. Schikowitz, and T. Volker. 2013. Growing into what? The (un-)disciplined socialisation of early stage researchers in transdisciplinary research. *Higher Education* 65: 511–524.
Fenwick, T., R. Edwards, and P. Sawchuk. 2011. *Emerging approaches to educational research: Tracing the sociomaterial*. Abingdon: Routledge.
Garcia, O., and L. Wei. 2014. *Translanguaging: Language, bilingualism and education*. London: Palgrave Macmillan.
Gergen, K.J. 2009. *Relational being: Beyond self and community: Beyond self and community*. Oxford: Oxford University Press.
Gherardi, S. 2008. Situated knowledge and situated action: What do practice-based studies promise? In *The SAGE handbook of new approaches in management and organization*, ed. D. Barry and H. Hansen, 516–525. Los Angeles: SAGE.
Gherardi, S. 2009. Practice? It's a matter of taste! *Management Learning* 50 (5): 535–550.
Gherardi, S. 2013. Is organizational learning possible without participation? In *Organisation und Partizipation*, vol. 13. ed. S. M. Weber, M. Göhlich, A. Schröer, C. Fahrenwald, H. Macha, 29–43. Wiesbaden: Springer.
Gherardi, S., and M. Perrotta. 2010. Where is induction? Profession, peer group and organization in contention. *Society and Business Review* 5 (1): 84–98.
Gherardi, S., and G. Rodeschini 2015. Caring as a collective knowledgeable doing: About concern and being concerned. *Management Learning* 47 (3)*:* 266-284.
Gherardi, S., and A. Strati. 2012. *Learning and knowing in practice-based studies*. Gloucester: Edward Elgar Publishing Limited.
Goffman, E. 1959. *The presentation of self in everyday life*. Garden City: Doubleday.
Green, B. 2009a. Introduction: Understanding and researching professional practice. In *Understanding and researching professional practice*, ed. B. Green, 1–18. Amsterdam: Sense Publishers.
Green, B. 2009b. The primacy of practice and the problem of representation. In *Understanding and researching professional practice*, ed. B. Green, 39–54. Amsterdam: Sense Publishers.
Hager, P. 2011. Theories of workplace learning. In *The Sage handbook of workplace learning*, ed. M. Malloch, L. Cairns, K. Evans, and B.N. O'Connor, 17–31. London: Sage.
Hager, P., and M. Johnsson. 2012. Collective learning practice. In *Practice, learning and change: Practice-theory perspectives on professional learning*, ed. P. Hager, A. Lee, and A. Reich, 249-266. Dordrecht: Springer.
Hendrickson, L., A. Balaguer, K. Baranyai, S. Brusse, M. Alinejad, J. Simpson, and R. Smith. 2013. *Australian innovation system report 2013*. Canberra: Innovation Research, Department of Industry.
Hopwood, N. 2016. *Professional practice and learning times, spaces, bodies, things*. Switzerland: Springer International Publishing.

Hopwood, N., and J. Paulson. 2011. Bodies in narratives of doctoral students' learning and experience. *Studies in Higher Education* 37 (6): 667–681.
James, R., and G. Baldwin. 1999. *Eleven practices of effective postgraduate supervisors*, Centre for the Study of Higher Education and the School of Graduate Studies. Melbourne: The University of Melbourne.
Jones, M. 2013. Issues in doctoral studies – forty years of journal discussion: Where have we been and where are we going? *International Journal of Doctoral Studies* 8: 83–104.
Keat, R. 1982. *Merleau-Ponty and the phenomenology of the body*. University of Edinburgh. https://pdfs.semanticscholar.org/cf6d/6d8c9810dd475e3ee7dd4cd26e2e82a27124.pdf. Edinburgh: Oct 2015.
Kemmis, S. 2009. Understanding professional practice: A synoptic framework. In *Understanding and research professional practice*, ed. B. Green, 19–38. Rotterdam: Sense Publishers.
Kemmis, S., J. Wilkinson, C. Edwards-Groves, I. Hardy, P. Grootenboer, and L. Bristol. 2014. *Changing practices, changing education*. Singapore: Springer.
Knorr Cetina, K. 1999. *Epistemic cultures: How the sciences make knowledge*. Cambridge: Harvard University Press.
Knorr Cetina, K. 2007. Culture in global knowledge societies: Knowledge cultures and epistemic cultures. *Interdisciplinary Science Reviews* 32 (4): 361–375.
Kornblauch, H. 2005. Focused ethnography. *Qualitative Sozialforschung/Forum: Qualitative Social Research* 6: 44. no. 10 September 2012.
Lave, J., and E. Wenger. 1991. *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
Manathunga, C. 2014. *Intercultural postgraduate supervision: Reimagining time, place and knowledge*. Oxford: Routledge.
Manidis, M. 2013. Practising knowing in emergency departments: Tracing the disciplinary and institutional complexities of working, learning and knowing in modern emergency departments. PhD thesis, University of Technology Sydney, Sydney.
Manidis, M., and R. Addo. 2017. *Learning a practice through practise: presenting knowledge in doctoral spoken presentations.* Studies in Continuing Education, 39(3). https://doi.org/10.1080/0158037X.2017.1306504
Manidis, M., and R. Goldsmith. 2017. *Governing the social, material, textual, and advancing professional learning of doctoral candidates in the contemporary university.* Teaching Public Administration. https://doi.org/10.1177/0144739417706428
Marginson, S., C. Nyland, E. Sawir, and H. Forbes-Mewett. 2010. *International student security*. Cambridge: Cambridge University Press.
Maton, K. 2010. Canons and progress in the arts and humanities: Knowers and gazes. In *Social realism, knowledge and the sociology of education*, ed. K. Maton and R. Moore, 154-190. London: Continuum International Publishing Group.
Mauss, M. 1973. Techniques of the body. *Economy and Society* 2: 70–88.
Nerland, M. 2012. Changes in knowledge cultures and research on student learning. *Research & Occasional Paper Series: Center for Studies in Higher Education, University of California, Berkeley* 14: 12.
Nicolini, D. 2013. *Practice theory, work, & organization: An introduction*. Oxford: Oxford University Press.
Noddings, N. 2003. Is teaching a practice? *Journal of Philosophy of Education* 37 (2): 245–251.
Norton, A., and I. Cherastidtham. 2014. *Mapping Australian higher education, 2014–5*. Melbourne: Grattan Institute.
Paltridge, B., and S. Starfield. 2007. *Thesis and dissertation writing in a second language: A handbook for supervisors*. Oxford: Routledge.
Parry, S. 2007. *Disciplines and Doctorates*. Dordrecht: Springer.
Perrotta, M. 2013. The Study of Technoscientific Imaging in STS. *Tecnoscienza: Italian Journal of Science & Technology Studies* 3(2): 163-175.

Rampton, B., J. Maybin, and C. Roberts. 2015. Theory and Method in linguistic ethnography. 2015. In *Linguistic ethnography: Interdisciplinary explorations*, ed. J. Snell, S. Shaw, and F. Copland, 14–50. Basingstoke: Palgrave Macmillan.

Schatzki, T.R. 1997. Practices and actions: A Wittgensteinian critique of Bourdieu and Giddens. *Philosophy of the Social Sciences* 27 (3): 283–308.

Schatzki, T.R. 2001. Introduction: Practice theory. In *The practice turn in contemporary theory*, ed. T.R. Schatzki, K. Knorr Cetina, and E. von Savigny, 1–14. London: Routledge.

Schatzki, T.R. 2006. On organizations as they happen. *Organization Studies* 27 (12): 1863–1873.

Schatzki, T.R. 2009. Timespace and the organization of social life. In *Time, consumption and everyday life: Practice, materiality and culture*, ed. E. Shove, F. Trentmann, and R. Wilk, 35–48. Oxford: Berg.

Schatzki, T.R. 2010. *The timespace of human activity: On performance, society, and history as indeterminate teleological events*. Plymouth: Lexington Books.

Schatzki, T.R. 2011. Landscapes as temporal spatial phenomena. In *The place of landscape*, ed. J. Malpas. London: The MIT Press.

Sfard, A. 1997. On two metaphors for learning and the dangers of choosing just one. *Educational Reviewer* 27 (2): 4–13.

Sieweke, J. 2014. Imitation and processes of institutionalization – Insights from Bourdieu's theory of practice. Schmalenbach Business Review, 24–42. Available at: https://ssrn.com/abstract.2223963 (accessed 20 April 2017).

Spaulding, L.S., and A.J. Rockinson-Szapkiw. 2012. Hearing their voices: Factors doctoral candidates attribute to their persistence. *International Journal of Doctoral Studies* 7: 199–219.

University of Queensland. 2008. *3MT three minute thesis*. Brisbane: University of Queensland Australia. viewed 3 Feb 2016.

Vagle, M.D. 2015. Curriculum as post-intentional phenomenological text: Working along the edges and margins of phenomenology using post-structuralist ideas. *Journal of Curriculum Studies* 47 (5): 594–612.

Ward, M.-H. 2013. *Living in liminal space: The PhD as accidental pedagogy*. Sydney: University of Sydney.

Wittgenstein, L. 1986. *Philosophical investigations*. 3rd English, Translated by G. E. M. Anscombe edn. Oxford: Basil Blackwell.

Wright, T., and R. Cochrane. 2000. Factors influencing successful submission of PhD theses. *Studies in Higher Education* 25 (2): 181–195.

Recruiting and Developing Second-Career Academics in Universities

7

D. P. Dash

Contents

Abstract

Second-career academics are people who choose to work as university academics after spending a considerable period of time in a different profession or domain of practice. While they hope to contribute to academia based on the competencies acquired in their first career, they also hope to derive greater job satisfaction and work-life balance from their second career. Many universities are recruiting second-career academics actively to infuse their academic activities with a measure of

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practical orientation. Although all higher education programs can benefit from such a practical orientation, it appears to be especially relevant for taught programs at the postgraduate level. Academics without adequate practical experience in a relevant industry or profession would find it difficult to satisfy the curiosity of postgraduate students, many of whom would look for value addition beyond the text book. However, recruiting and developing second-career academics seems rather fraught with issues. While some of them adjust to their new career with relative ease, many of them experience the career transition to be a rather stressful, even traumatic experience. Research on second-career academics suggests a variety of strategies for inducting them into academia and supporting them adequately to derive the benefit of their experience. While some of them would need career counseling, others may need operational support, broader exposure, or simply greater recognition for their contributions. Selecting the right mix of strategies is important and it should be based on an adequate understanding of the issues and challenges second-career academics face in adjusting to their academic lives.

Keywords
Academic culture · Academic identity · Academic staffing · Appointment level · Career counselling · Career transition · Graduate employability · Institutional expectation · Professional identity · Second-career academic

Importance of Second-Career Academics in Universities

This chapter relates to a particular challenge of academic staffing in contemporary universities, especially with regard to the staffing of professionally oriented tertiary education programs. The challenge relates to recruiting experienced professionals from relevant fields and making them effective contributors towards the educational and research missions of a university. The chapter presents a research-based framework that might be used as a heuristic to understand the challenges of recruiting and preparing such professionals for academic roles in universities. It also presents the author's suggestions on specific postgraduate programs which can fulfill the developmental needs of such professionals while they are transitioning from industry to academia. Postgraduate programs with this type of focus might become a necessary component of faculty development in the twenty-first century.

The staffing challenge is part of the unprecedented expansion of tertiary education globally since the 1990s – *The Economist* brought out a special report on this in 2015 (see Duncan 2015). As tertiary enrolments have multiplied across the world, universities have been faced with a plethora of operational challenges, one of which is the challenge of staffing. Interestingly, in many regions of the world, the expansion of higher education has been accompanied with the burgeoning phenomenon of *career transition* from various professional fields into academia. Several studies have focused on this phenomenon since the turn of the century (e.g., Anderson 2009; Bandow et al. 2007; LaRocco and Bruns 2006; Logan et al. 2014; Simendinger et al. 2000; Wilson et al. 2014a).

The present author had been involved in recruiting and developing such professionals who are transitioning into academia. The author had also been involved in studies focusing on the experience of second-career academics (on this subject, he has also supervised a doctoral research project [Ong 2015]). The current chapter draws on the research literature in this area as well as the author's own administrative and research experiences.

This introductory section outlines the unique career circumstances of second-career academics, clarifying why they join academia and the sort of education and development that might be relevant for them. The remaining sections offer a description of the second-career experience in academia (section "Nature of Second-Career Experience in Academia"), theirs need for further education and development (section "Academics with Special Needs"), and specific suggestions for university managers with regard to recruiting and developing second-career academics (section "Suggestions for University Managers").

Who Are Second-Career Academics?

> I am a "second-career" academic. I am 50. I am an Assistant Professor. I teach on a satellite campus of a Big Ten University. My hair is more salt than pepper. This is my fifth year in academia. (Tyler 2010, p. 38)

A *second-career academic* (LaRocco and Bruns 2006; Posner 2009 [uses the equivalent term, *pracademic*]) is one who chooses to reinvent himself or herself as an academic, after a substantial first career in the professional world outside academia. Tyler, quoted above, left a 25-year career in training and organization development in the private-sector, to become an Assistant Professor of Training and Development, teaching in a Master's program.

Today, second-career academics work in all university faculties that prepare students for professional service. These include faculties such as architecture, art and design, business and management, computing, education, engineering, natural resource management, media and public relations, medicine, nursing, public administration, public health, rural development, social work, tourism and hospitality, urban development, and so forth.

In order to justify being labeled a second-career academic, one ought to have adequate experience in a first career before joining academia. This means, one would have stayed in the first career long enough to have gained rich exposure to a practical domain, and also long enough to have acquired the knowledge, thinking style, work culture, and value system associated with that practical domain. Such experienced professionals would have developed a *professional identity* of their own (Clegg 2008; Sharp et al. 2015), reflecting a cultivated sense of who they are. Their professionalism would manifest in their beliefs, attitudes, and values and also reflect in their personal habits and social networks.

Academic qualifications vary among second-career academics. Many have undergraduate diplomas or Bachelor's degrees; some have postgraduate

diplomas or Master's degrees. A doctoral-level degree (such as Doctor of Business Administration [DBA], Doctor of Public Administration [DPA], Doctor of Education [EdD], Doctor of Engineering [EngD], or the more general Doctor of Philosophy [PhD]) is relatively rare among second-career academics. A proportion of the second-career academics choose to enroll themselves for higher qualifications, driven either by institutional incentives or by their own desire to acquire higher academic qualifications, or more likely, a combination of both.

Why Do They Join Academia?

The studies cited above indicate many of reasons why experienced professionals may choose to enter into academia. For some, academia offers an alternative career option in the twenty-first century that appears to be less frantic, nobler, and potentially enriching. In many societies around the world, university positions continue to command considerable prestige. Of course, for some it could be just another job available when their own jobs are threatened by industrial (or sectoral) decline, economic downturn, or any other reason.

Universities on their part also want to attract professionally experienced members into their faculties. This is not only due to a faculty shortage in several professionally oriented disciplines, but professionally experienced faculty-members also to bring a greater degree of realism into the classroom (e.g., Anderson 2009 [clinical practice]; Bishop et al. 2016 [accounting]; Feldman et al. 2015 [nursing]; Weber and Ladkin 2008 [tourism and hospitality]; Yudkevich et al. 2015 [covering various countries]). Regular interaction with professionally experienced faculty members also helps students to be better prepared for future employment. This has acquired further significance in the recent times, as *graduate employability* has become a key indicator of university performance and reputation globally (Clinebell and Clinebell 2008; Duncan 2015).

As universities respond to the talent requirements of industry through a variety of professionally oriented undergraduate and postgraduate programs, there is a need to balance the theoretical training with a practical orientation that second-career academics can impart. This requires universities to sustain active engagement with industry and community, in order to generate opportunities for student projects, scholarships, internships, research partnerships, faculty consulting, commercialization of intellectual property, and so forth. In all these areas, universities stand to benefit from the skills and connections of professionally experienced faculty members.

Thus, there are both push and pull factors working here. A second career in academia has emerged as an attractive option for senior professionals in the twenty-first century. They have the practical experience and professional learning which are considered vital for university education today. On the other hand, a career transition into academia promises to be a personally rewarding experience for senior professionals.

Their Need for Education and Development

In reality, however, not all second-career academics find academia equally rewarding. They do not fare equally well in their new work environment in academia. Research shows that second-career experience in academia could turn out to be a mixture of both pleasant and frustrating experiences (LaRocco and Bruns 2006; Logan et al. 2014; Ong 2015). Adapting to the value system, work culture, and performance expectations of a contemporary university can pose a variety of challenges for transitioning professionals. It is important to start with a good understanding of second-career experience in academia, before formulating specific programs of support and development.

Section "Nature of Second-Career Experience in Academia" presents a research-based framework to facilitate such an understanding. Based on this, section "Academics with Special Needs" clarifies two sets of needs relevant to the education and development of second-career academics: (a) need for greater alignment with academic culture and (b) need for recognition and reassurance from the institution.

Nature of Second-Career Experience in Academia

The label *second-career academic* hides considerable diversity within itself. Moreover, universities as workplaces also vary a great deal in terms of their institutional priorities, human resource policies, and organizational climate. Consequently, second-career experience in academia turns out to be quite diverse and multifaceted. A research-based framework is presented below that offers a way to structure this diversity so as to render it somewhat comprehensible and manageable. It is a two-dimensional framework that yields nine categories of second-career experience in academia (see Fig. 1).

The two dimensions of the framework are described below. The nine categories of experience defined by these dimensions are clarified next, together with their relevance for university managers. The framework is proposed as a heuristic, to be applied and developed in multiple contexts.

Two Dimensions

Alignment with Academic Culture

Second-career academics appear to experience varying degrees of alignment with academic culture. Aspects such as flexible working hours and collegial working relationships are welcomed by most second-career academics. However, this may not always produce a strong sense of alignment with academic culture. A lot depends on their acceptance of academic practices and values, as well as their own performance in the university setting. Some of them experience difficulty with the digitalized work environment now common in universities. Some find the ever growing

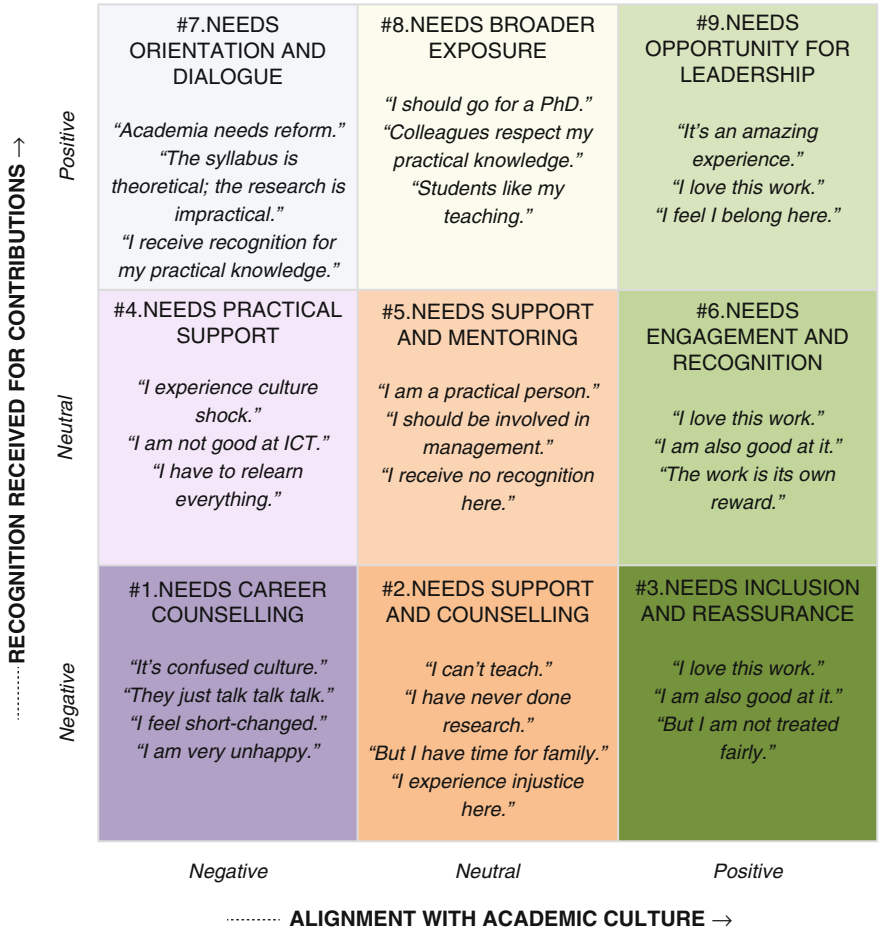

Fig. 1 Diversity of second-career experience in academia. *Note*. This framework extends the work of Ong (2015)

need for meticulous documentation difficult to satisfy. Institutional expectations related to research and scholarship could be another difficulty.

Some second-career academics also find it difficult to reconcile with the fact that they are beginning at a lower rung of the academic ladder, despite their considerable experience and professional achievements in the previous career. In some cases, this leads to an acute sense of having been short-changed. Acting in combination, such factors could yield an overall sense of positive, neutral, or negative alignment, depending upon a variety of personal and institutional contingencies.

Recognition Received for Contributions

Upon joining academia, second-career academics are welcomed enthusiastically by their institutions, as the institutions had their own good reasons for recruiting them in

the first place. The professional experience of these new members is acknowledged and their decision to join academia is applauded (e.g., in welcome messages or faculty meetings). However, this honeymoon phase does not last very long. These academics, like everyone else, are expected to perform according to established performance standards. These performance standards often do not align well with the specific backgrounds and skills of second-career academics.

In the course of their work in academia, sometimes second-career academics receive appreciations from students or colleagues for their contributions. Such appreciations generate and sustain a sense of recognition. Moreover, if they are given an opportunity to contribute to institutional management in areas of their professional expertise, even if in an advisory capacity, it can also create a sense of recognition. On the other hand, if they receive no support in developing the new skills they need in order to perform well in academia, or if their inputs are not sought in institutional matters, it can lead to feelings of isolation, marginalization, or even abandonment.

Juxtaposing these two dimensions, nine categories of experience are identified (see Fig. 1). These categories capture a vast range of second-career experience in academia. The categories align well with empirical data (i.e., the data reported by Ong 2015). The framework promises to be a useful heuristic for appreciating the range of issues affecting second-career academics, supporting them to adjust better with academia, and addressing their developmental needs. Of course, considering research limitations, the framework is best seen as a provisional one and, thus, subject to adaptation and optimization in different institutional settings.

Nine Categories of Experience

Category #1: Negative Alignment and Negative Recognition

This is the double negative experience. Here the second-career academic experiences a strong misalignment with academic practices and values. On top of that, the person also experiences isolation and abandonment, due to lack of appreciation from the institution. Quite likely, the person struggles to meet performance expectations, inviting negative appraisal from the institution. The person is found complaining and criticizing, which, unfortunately, could aggravate the negativity. Such a situation calls for a reassessment by the person as well as the institution. The person needs to re-examine their career choice. The institution needs to review its assumptions and practices for recruiting, supporting, engaging, and developing second-career academics. It may be possible to salvage the situation by providing career counseling. This may lead to either a choice away from academia or a more realistic assessment of the preparations needed to play an effective role in academia.

Category #2: Neutral Alignment and Negative Recognition

In this category of experience, the person appreciates some aspects of academic life and culture. Often it is elements like flexible working hours and a relatively low-pressure environment (compared to the person's previous career experience).

The person may appreciate some other aspects too, such as the environment of collegiality or the social esteem associated with an academic job. However, some other aspects of academic culture create a negative experience for this person. These may include the university's expectations from academics, for which the person feels inadequately prepared. The positive and negative elements appear to neutralize each other. On the other dimension, the person's experience is similar to that of Category #1: the person experiences isolation and abandonment, due to lack of appreciation. A situation like this ought to remind university managers that an experienced professional may not become an effective contributor in academia automatically; the person may need systematic support and counseling. Moreover, suitable forms of engagement and relevant pathways for career progress are also needed.

Category #3: Positive Alignment and Negative Recognition

This refers to a situation where the person experiences positive alignment with academia. This means, the person appreciates academic practices and values. However, this encouraging picture is marred by a negative outcome on the other dimension, institutional recognition. This could happen due to several reasons. A sense of nonrecognition could arise if the person thinks that their academic appointment level does not reflect their seniority. This could also arise from a sense of marginalization, if their inputs are not sought in institutional matters. Moreover, it is possible that despite the positive alignment with academic culture, the actual performance may be below institutional expectations. A managerial response to this could focus on inclusion and reassurance. The sense of marginalization can be addressed through greater opportunities for engagement at faculty or institutional levels (e.g., through projects, committees, special duties). In case the performance is indeed below institutional expectations, the person would need the encouragement, support, and training to achieve improvements.

Category #4: Negative Alignment and Neutral Recognition

This may seem like a peculiar combination. When someone experiences negative alignment with academic culture, how can the same person experience neutral recognition – shouldn't the person experience negative recognition too? Well, in this case, there is possibly a combination of positive and negative recognitions, so that the result is neutral. While the sense of negative recognition could arise in many ways (as stated under Categories #1, #2, and #3), experience of positive recognitions can also arise independent of one's alignment with academic culture. For example, students may simply appreciate the viewpoints and the communication style of a teacher who brings substantial professional experience into the classroom conversations. Sometimes, students may appreciate this even more if it comes laced with some reasonable critique of academic culture. Similarly, depending on the depth and breadth of industry knowledge such academics bring with them, faculty colleagues may acknowledge it in various ways (e.g., by seeking their advice on external projects or inviting them into their classrooms as guest speakers). Thus, both negative and positive recognitions can coexist. Persons experiencing this have the

double task of adapting to academic culture and fulfilling institutional expectations. They will benefit from any practical support that may help them accomplish this. Depending on their degree of commitment to academia, they may also benefit from receiving guidance and mentoring.

Category #5: Neutral Alignment and Neutral Recognition

In the two-dimensional arrangement of the nine categories, Category #5 occupies the middle ground, representing neutral values along both the dimensions. In this framework, a neutral value is interpreted as a combination of positive and negative values, so that neither the positive nor the negative dominates. Therefore, Category #5 represents a mixed experience along both the dimensions: neutral alignment with academic culture and neutral recognition received for contributions. The situation is quite like Category #4, except that the person experiences a bit more alignment with academic culture here. From their professional perspective, they tend to see the university as a business organization involving the same sort of issues as any other, albeit having a unique type of culture, to which they cannot subscribe wholeheartedly. Based on their professional expertise, they feel competent to make practical contributions to the university. But if the university does not reciprocate adequately, it can result in a sense of nonrecognition. Here, the person is at the halfway house on both dimensions; therefore, it may be possible to build on the positive elements through support and mentoring.

Category #6: Positive Alignment and Neutral Recognition

The positive alignment with academic culture that we see in Category #6 represents a deeper connection with academia. It is possible that the person had some intellectual inclination even as a professional working outside academia. Despite their affinity towards academic culture, they do not seem to receive any more recognition from the institution than those whose experiences belong to Categories #4 or #5. For all of them, positive and negative elements of recognition appear to balance out. Although their professional expertise might be appreciated by students and colleagues, perhaps they do not meet institutional expectations in some areas. But that does not push them to a zone of nonrecognition because the common grievance related to appointment level may not be so strong here. It is possible that the university has already offered them a higher appointment level, in consideration of their professional achievements and leadership contributions. The developmental priority here could be on engagement and recognition. Opportunities for greater engagement with the affairs of the university would be a form of recognition in itself.

Category #7: Negative Alignment and Positive Recognition

A negative alignment with academic culture and yet a positive recognition from the institution may appear like an unlikely combination. However, it could be the reality for those who emerge as strong and vocal critiques of academic values and practices as they see it in the institution. Although they do not align with academic culture, their practical knowledge is recognized by students and colleagues. Perhaps these persons are persuasive communicators. They are able to give a

constructive bent to their disaffection with academia. These persons may come to represent the critical voice of industry and society within the university. When this is noticed by the institution, they may be co-opted into policy-level deliberations, curriculum design projects, or industry interface activities. If this happens, it could strengthen their sense of recognition. However, the issue of misalignment with academic culture still remains in the background. This may be addressed through appropriate orientation and continuing dialogue. The developmental task is that of shifting them from the position of external critiques towards becoming internal reformers of academia.

Category #8: Neutral Alignment and Positive Recognition

Second-career academics experiencing neutral alignment with academic culture and positive recognition from the university represent a slightly higher degree of adaptation to academia than those whose experiences come under Category #7. Persons with Category #8 experiences are possibly recognized for their professional achievements and leadership contributions. Possibly, they are offered opportunities to contribute at an institutional level. All of these, together with positive appreciation from students and colleagues, can produce an overall positive experience on the recognition dimension. Although they are not fully aligned with academic culture, they experience both positive and negative elements on this dimension. One of the main negative elements could arise from the domain of research and scholarship – an aspect of academic culture for which they feel inadequately prepared. It is not uncommon for them to invest time and effort to build research skills and acquire a doctoral qualification. If the doctoral experience turns out to be rich and positive, it could enhance their alignment with academic culture, so that their overall experience shifts to Category #9. To facilitate this, the university could focus on providing them with a broader exposure to the academic world.

Category #9: Positive Alignment and Positive Recognition

This is the double positive experience, quite the opposite of Category #1. Here the person experiences a strong alignment with academic practices and values. At the same time, the person also experiences positive appreciation and recognition from the institution. Very few second-career academics would arrive at this category automatically. However, it can be a worthy destination for all. Some second-career academics would make their way into this category, with support from the institution. For some it could be a lengthy and arduous mission, not always accomplished fully. Category #9 represents the experience of those who have good adjustment with academia, contributing effectively to the university, and receiving strong recognition for their contributions. They are either meeting or exceeding the university's expectations in most areas of academic work and getting rewarded and recognized for their contributions. To keep them engaged in this mode of behavior and also to enable them to influence others who experience deficits in any of the two dimensions, it is important that they are given opportunity for leadership. Second-career academics under this category of experience can be excellent role models for others who are grappling with their career transition into academia.

Academics with Special Needs

In the twenty-first century, universities across the world need second-career academics to add a layer of professional expertise and external networking to their staffing profile. This is of critical importance for student learning, especially in professional courses. This is also important for bringing the university closer to the professional world outside academia, by reflecting industry expectations in all domains of university activity. Recruiting experienced professionals also addresses the issue of faculty shortage in several discipline areas.

However, the foregoing discussion on the experience of second-career academics indicates that greater care is needed in the recruitment and development of experienced professionals as university academics. Research suggests that second-career academics may well be viewed as a group of academics with special needs. Their special needs could be derived from the same framework presented earlier (see Fig. 1). Each dimension of the framework suggests a set of special needs.

Special Needs Relating to Alignment

Quite possibly, any prior experience second-career academics had with academia was when they were university students themselves. Considering the length of their tenure in their first career, that academic experience may well have been from a decade or more ago. Even so, that academic experience is the experience of a student, not directly in contact with the inner workings of academia. Under these circumstances, their ideas and impressions about academia are likely to be rather limited and outdated. If their transition into academia is based on these limited and outdated ideas, they are clearly in for some surprise.

Besides, their professional identities would have come to represent the values, beliefs, and practices associated with their first careers. Some of these may not align well with the values, beliefs, and practices they encounter in academia. Consequently, second-career academics typically experience varying degrees of dissonance within academia. This is borne out in several studied focused on the experience of *career transition* from industry to academia (see section "Importance of Second-Career Academics in Universities" above for an indicative list of such studies).

In order to adjust well to academic life, it is important for them to address this dissonance and develop greater alignment with academic culture. In this light, the following sort of needs can be anticipated:

(i) Coming to terms with the appointment level
(ii) Appreciating and getting used to academic freedom
(iii) Adjusting to the institutional work environment
(iv) Accepting and cultivating academic thinking
(v) Developing appropriate curriculum practice
(vi) Acquiring classroom performance and student management competencies

(vii) Acquiring relevant technological skills
(viii) Getting used to the high level of documentation
(ix) Understanding performance expectations in research and scholarship
(x) Building research skills, scholarly profile, and eventually, an *academic identity*

Special Needs Relating to Recognition

In addition to the above adjustment challenges, career transition into academia also poses a threat to the self-esteem of second-career academics. Leaving behind their status as senior professionals, together with all its privileges, and starting all over again in a new field that they do not fully grasp can be an unsettling experience. Moreover, coming across onerous performance expectations and receiving unkind performance ratings can add insult to injury, leading to a genuinely traumatic experience for some second-career academics.

In order to remain functional and develop themselves academically, second-career academics need to maintain their self-esteem. For this, apart from their own confidence about translating their success from one domain into another, they also need constant reassurance about their positive role in academia. Such recognition and reassurance can be conveyed in multiple ways. In the absence of such recognition and reassurance, there is a danger that second-career academics may lose their self-confidence and be overwhelmed with bitterness and anxiety. The need for recognition and reassurance can manifest in the following sort of ways:

(i) Opportunity to discuss any grievance regarding appointment level
(ii) Opportunity to share the sense of isolation or marginalization
(iii) Formal recognition of professional expertise
(iv) Informal appreciation of professional expertise from students and colleagues
(v) Opportunity to contribute to institutional management
(vi) Operational assistance with technology and documentation
(vii) Support for developing the new skills required for academic work
(viii) Availability of career counseling and mentoring inputs
(ix) Realistic performance expectations and pathways for career progress
(x) Opportunity for orientation, dialogue, and broader exposure

University managers experienced in academic staffing will recognize that some of the above needs would also apply to other categories of academic staff. What makes the second-career academics a special category is their professional identity, cultivated in a different career context. In fact, it is that professional identity which is the very reason why they are recruited by the university in the first place. Therefore, it would be self-defeating to view that professional identity as a hurdle to be overcome. On the other hand, the university needs to devise policies and practices to address the above needs of second-career academics, so that their professional expertise and orientations are treated as important initial conditions in their academic development.

Suggestions for University Managers

In order to fulfill the purpose of having second-career academics in universities, appropriate policies and practices need to be established for recruiting, supporting, engaging, and developing this category of academic staff. Designing and implementing these policies and practices ought to be informed by the sort of insights described above, with an awareness of the diversity of second-career experience in academia and the special needs of this group of academics. Some pointers towards such policies and practices are presented below.

Recruiting Second-Career Academics

While recruiting senior professionals into academic roles, careful assessment should be made of their fit with academia in general and with the specific institution in particular. Motivations behind their career transition, assumptions they make about academic culture, and their preparedness for all domains of academic work ought to be assessed realistically. Open dialogue regarding appointment level, institutional expectations, and pathways for career progress need to occur early in the process, in order to avoid future disappointments.

Insufficient awareness exists among senior professionals intending to move into an academic career. It would be useful to have multiple sources of information to bridge this gap. An excellent example is found in Australia, where the useful primer titled, *Down the Rabbit Hole: Navigating the Transition From Industry to Academia*, was published in 2014, with support from the Office for Learning and Teaching, Government of Australia (Wilson et al. 2014b).

Similar resources need to be prepared by universities, localizing the information to their institutional contexts. Before they are recruited, second-career academics should be given the opportunity to engage with such resources, clarify and adjust their expectations, and have a realistic understanding of the demands of contemporary academic work.

Supporting Second-Career Academics

As implied above, support needs to start even before the career transition into academia is initiated. Various forms of support need to continue throughout the transition process and thereafter.

A fairly rigorous induction program is needed to introduce these experienced professionals into the life and culture of academia. This could also be an opportunity to introduce the contemporary paradigms of university teaching and learning, widespread use of educational technology, and the emerging demands of university regulation, especially with respect to academic quality assurance.

Regular assistance and training is to be offered, covering information technology, curriculum and pedagogy, educational technology, quality assurance processes, oral and written communication skills, and academic thinking.

Moreover, there is a persistent need for counseling, guidance, and mentoring. This can occur in multiple ways. A key aspect of this is the opportunity for dialogue and broader exposure, to help second-career academics renegotiate their images of academia and prepare themselves for meaningful academic roles.

Engaging Second-Career Academics

The practical expertise of second-career academics ought to be a basis for their engagement with university work. This may mean the allocation of appropriate courses, involvement as guest speakers, suitable involvement in institutional management, and opportunity for external engagement. Some innovations in this area include new designations and programs such as Executive Professor, Industry Professor, Alumni Professor, and "professor for a day."

Often, the established criteria for academic career progress are stacked unfavorably against second-career academics. In order to avoid the experience of unfairness and marginalization among second-career academics, and to engage them more productively, universities may consider revisiting academic career pathways and related performance criteria.

Developing Second-Career Academics

All the suggestions made above play a role in the development of senior professionals as academics. However, specific policies and programs are needed to guide the long-term development of their academic identity (Clegg 2008; Sharp et al. 2015). This can be facilitated through opportunities for systematic reflection on their career transition experience, their emerging role in academia, and the meaning of their academic career. Where possible, this may be implemented through *cooperative inquiry* groups or simply through guided *reflection on practice* (Schön 1983/1991).

Two types of educational programs can help in the academic development of second-career academics. Postgraduate programs on tertiary teaching and learning covering the following content areas would be useful: (a) nature of learning and teaching, (b) curriculum design and assessment, (c) digital learning environments, (d) dealing with diversity for inclusive learning and teaching, and (e) scholarly teaching (to explore, evaluate, and improve practice).

Nontraditional doctoral-level programs, such as those based on *practice-based research*, could be offered to senior professionals as well as second-career academics to open up suitable pathways for upgrading their academic qualifications

(Bishop et al. 2016). This could help them develop a scholarly profile and prepare for academic leadership roles in future.

A word of caution: Postgraduate education programs such as those mentioned above (or shorter training programs on specific aspects of academic practice) would not achieve the overall aim of integrating second-career academics as effective contributors within academia. A coherent package of policies aimed at recruiting, supporting, engaging, and developing them for their new role as academics would be needed.

References

Anderson, J.K. 2009. The work–role transition of expert clinician to novice academic educator. *Journal of Nursing Education* 48 (4): 203–208.

Bandow, Diane F., Barbara D. Minsky, and Richard S. Voss. 2007. Reinventing the future: Investigating career transitions from industry to academia. *Journal of Human Resources Education* 1 (1): 23–37.

Bishop, Carol C., Douglas M. Boyle, Brian W. Carpenter, and Dana R. Hermanson. 2016. Transitioning into academia: A new pathway for practitioners. *Journal of Accountancy* 221 (3): 48–53.

Clegg, Sue. 2008. Academic identities under threat? *British Educational Research Journal* 34 (3): 329–345.

Clinebell, Sharon K., and John M. Clinebell. 2008. The tension in business education between academic rigor and real-world relevance: The role of executive professors. *Academy of Management Learning & Education* 7 (1): 99–107.

Duncan, Emma. 2015, March. Excellence v equity (Special report: Universities). *The Economist* 28: 1–10. http://www.economist.com/sites/default/files/20150328_sr_univ2.pdf. Accessed 25 May 2017.

Feldman, Harriet R., Martha J. Greenberg, Marilyn Jaffe-Ruiz, Sophie Revillard Kaufman, and Stacie Cignarale. 2015. Hitting the nursing faculty shortage head on: Strategies to recruit, retain, and develop nursing faculty. *Journal of Professional Nursing* 31 (3): 170–178.

LaRocco, Diana J., and Deborah A. Bruns. 2006. Practitioner to professor: An examination of second career academics' entry into academia. *Education* 126 (4): 628–629.

Logan, Patricia Anne, Edwina Adams, Doreen Rorrison, and Graham Munro. 2014. Exploring the transition to becoming an academic: A comparative study of Australian academics with and without a doctorate. *Journal of Perspectives in Applied Academic Practice* 2 (3): 34–47. http://jpaap.napier.ac.uk/index.php/JPAAP/article/view/125/pdf. Accessed 1 June 2016.

Ong, Liap Teck. 2015. *Experiencing a re-entry: Second-career academics in business schools in Malaysia*. Doctoral dissertation, Swinburne University of Technology, Melbourne. http://hdl.handle.net/1959.3/412713. Accessed 1 June 2016.

Posner, Paul L. 2009. The pracademic: An agenda for re-engaging practitioners and academics. *Public Budgeting & Finance* 29 (1): 12–26.

Schön, Donald A. 1991. *The reflective practitioner: How professionals think in action*. Aldershot: Arena/Ashgate. (First published by Basic Books, New York, in 1983).

Sharp, John G., Brian Hemmings, Russell Kay, and Carol Callinan. 2015. When worlds collide: Identity, culture and the lived experiences of research when 'teaching-led'. *Journal of Further and Higher Education* 39 (5): 612–644.

Simendinger, Earl, George M. Puia, Ken Kraft, and Michael Jasperson. 2000. The career transition from practitioner to academic. *Career Development International* 5 (2): 106–111.

Tyler, Jo A. 2010. Tenure tensions: Out in the enchanted forest. *New Horizons in Adult Education and Human Resource Development* 24: 38–43. http://files.eric.ed.gov/fulltext/EJ969503.pdf. Accessed 1 June 2016.

Weber, Karin, and Adele Ladkin. 2008. Career advancement for tourism and hospitality academics: Publish, network, study, and plan. *Journal of Hospitality & Tourism Research* 32 (4): 448–466.

Wilson, Michael J., Leigh N. Wood, Ian Solomonides, Peter A. Dixon, and Merrilyn E. Goos. 2014a. Navigating the career transition from industry to academia. *Industry and Higher Education* 28 (1): 5–13.

Wilson, Michael John, Leigh N. Wood, Ian Solomonides, Merrilyn E. Goos, and Peter A. Dixon. 2014b. *Down the rabbit hole: Navigating the transition from industry to academia*. Sydney: Office for Learning and Teaching, Government of Australia. https://staff.mq.edu.au/public/download.jsp?id=147729. Accessed 1 June 2016.

Yudkevich, Maria, Philip G. Altbach, and Laura E. Rumbley, eds. 2015. *Young faculty in the twenty-first century: International perspectives*. Albany: SUNY Press.

8 Information Literacy: Culturally and Linguistically Diverse Postgraduate Students and Their Needs

Marcus K. Harmes and Barbara Harmes

Contents

Abstract

This chapter brings together two important elements of research at the doctoral level: information literacy (IL) and culturally and linguistically diverse (CALD) students.

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Having answered the question: 'What is information literacy?' the chapter explains that IL encompasses the most effective way to negotiate complex information sources and modes of study. The linkage between information, learning, scholarship and research is integral to successful postgraduate study. Focusing on both the need for IL and the best ways to deliver this support, the chapter provides a model for inculcating IL into the learning experience of CALD HDR students. The chapter's focus on established practices at a regional university demonstrates the efficacy of providing students with targeted and specific support. It is also particularly pertinent for staff and students at a newly established university and this is one of the chapter's most important aspects. It describes the use of different methodologies (face-to-face and online learning support; workshops and seminars) and personnel (lecturers, library staff, supervisors and a learning support academic who is available on site for students). Importantly, as a way to validate the model, its effectiveness is underlined by providing the results of data collected from students.

Keywords
Information literacy (IL) · Culturally and linguistically diverse (CALD) · Higher Degree by Research (HDR) · Phenomenography · Methodologies

Background

Factors addressed in this chapter are both timely and significant for current postgraduate education and would matter to university administrators and postgraduate educators were they to start a center for higher education from new. One factor is the presence of international students and the other is the information literacy needs of these students. The number of Culturally and Linguistically Diverse (CALD) students in Australian universities is already significant and is still growing. They comprise approximately 20% of all university students. To be clear, by no means all CALD students are international students, and domestic students from migrant and refugee backgrounds are also CALD students. In this chapter, however, the focus will be on international students, meaning students enrolling from their home country and normally with the intention of returning to their home country following completion of their postgraduate study. In 2016, according to the Australian Government, over 700,000 international students were enrolled in Higher Education in Australia across a number of sectors. The figures are high elsewhere in the western world. The UK's Home Office accounted for 438,010 students who were domiciled in the UK over 2015–2016, of which a significant proportion were postgraduate students. In 2016, media reports in the USA noted that the numbers of international students coming to study there were at all-time highs. All of these students, but particularly those who are enrolled in Higher Degree by Research (HDR) in Australian tertiary institutions, need support in many areas of their study, and specifically in the field of information literacy.

Purpose

The aim of this chapter is firstly to explain the needs of CALD HDR students (in this case at an Australian regional university) in relation to information literacy (IL); secondly, to outline the support they can receive that will assist in inculcating information literacy; and thirdly to assess the way in which this support will benefit students.

Design/Method

The study used a qualitative explorative approach to gain rich in-depth data. Eleven CALD HDR students participated in a hybrid questionnaire and semi-structured interview which focused on core questions about their understanding of information literacy, the effectiveness of key stakeholders, and the value of programs provided across the university to inculcate information literacy. The results and conclusions of this research are embedded in this chapter following discussion of the pedagogical and theoretical perspectives that are apparent on IL.

Introduction

Focus

This chapter has three foci: first, to explain the complexities of information literacy as it relates to HDR students (and specifically CALD HDR students) and the need to provide learning support to CALD students to increase their familiarity with information literacy (IL); second, suggestions for the most effective ways to deliver this support; and third, an evaluation of the efficacy of stakeholders and support systems. Twenty-first-century universities should take heed of all three points. The market for international students remains important, but as a consequence so does the need for adequate and informed support for this cohort. Based on research, this support needs to be specifically tailored to the needs of individual students while also incorporating some invaluable group work. A major area where developing support is essential is IL, or the ability to identify, locate, critically evaluate, and use information in an articulate and grammatically correct way. IL is essential for all students, but particularly for CALD students, those having a specific cultural or linguistic affiliation by virtue of their place of birth, ethnic origin, religion, or preferred language (Ethnic Communities' Council of Victoria 2012). IL plays a central role in the successful negotiation of academic discourse, particularly for CALD students who have traveled internationally to be HDR students.

The Learning Framework

CALD HDR students have specific linguistic and cultural needs, and for these students learning is most effective if it is student centered. Thus IL may be considered within a phenomenographic (or relational) conceptual framework: that is,

"earning as experienced from the perspective of the learner" (Andretta 2007, p. 152). It is – and this point is significant – the foundation of independent learning (p. 152). As they undertake the research for their dissertation, it is important for HDR students to come to terms with this type of learning. Therefore, the support and the learning strategies that will be presented in this chapter will have a phenomenographic focus. Students will benefit because their study will be student-centered and they will approach the tasks in an independent way to construct and present new knowledge. Where possible, it will involve deep rather than surface learning (Marton 1994, p. 4424); this point refers to "the learning process as a concept of understanding and discovering" (Saljo 1979, cited in Aharony 2006, p. 853), as part of the phenomenographic framework. That is, it will be predicated on insight and comprehension. In order to develop a deeper conceptual understanding of the material they are studying, repetition, reiteration, and reflection will be essential to reinforce the notion of IL as "a recursive experience rather than a simple ladder of skills to be attained" (Bent et al. 2007, p. 84). Students do not learn effectively from doing something once – they need reinforcement in all aspects of IL and this is best done on an individual basis.

The Student Cohort

The students who are the focus of this chapter are enrolled in a Higher Degree by Research (HDR) at an Australian regional university, the University of Southern Queensland (USQ). They have either made the transition from an English language intensive pathways program into their HDR (including Research Masters, PhDs and Professional Doctorates) or have entered their HDRs directly from undergraduate study at an overseas university. The umbrella term "HDR" will be used to encompass all cohorts of students who work with supervisors, have chosen a topic for their dissertation, and are researching for their proposal or their dissertation, or they completing their doctorate through the publication of articles.

They are confronted with a pedagogical environment marked by more challenging tasks, including comprehensive and detailed research, complex readings, the demand for critical thinking, and the necessity of using appropriate academic English, in both written and oral modes. It is at this stage that many of their potential problems – and therefore their need for ongoing support – become apparent.

Information Literacy

Information literacy is a complex set of ideas and processes. An important early conceptualization is Zurkowski's (1974), when he noted that:

> People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range

> of information tools as well as primary sources in molding information solutions to their problems. (p. 6)

Since that time, definitions have been elaborated on by many educational theorists. Johnston and Webber (2003) offer that information literacy is "a response to the cultural, social and economic developments associated with the information society." Therefore, it does not exist in a vacuum or without purpose. Their explanation takes into account the vast and increasing amount of information available to students. However, the meaning of IL goes beyond this limit; Johnston and Webber (p. 337) explain that IL includes the ability to identify, retrieve, evaluate, adapt, and organize information, and to communicate ethically within a context of review and reflection. Inherent within this meaning is a recognition of the need for information and the ability to determine the nature and extent of the information needed. It is, as Bruce (in Johnston et al. 2014, p. 553) explains, "experiencing different ways of using information to learn." These requirements are essential aspects of postgraduate study.

The significance of IL to postgraduate study is underlined firstly by the increasing amount of information that students (and in this case CALD HDR students) need to negotiate and secondly by the amount of recent research into the area. The definitions given above have been augmented by the Association of College and Research Libraries (ACRL) (2015); IL is "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning." This definition is important because, as Coonan (2011, pp. 5–6) explains: IL is "a continuum of skills, behaviours, approaches and values that is so deeply entwined with the uses of information as to be a fundamental element of learning, scholarship and research." The linkage between information, learning, scholarship, and research is integral to successful postgraduate study. These are complex issues; for HDR students, the use of information to generate and effectively use new knowledge is essential, but it may be a challenging process. For students whose first language is not English, and whose prior educational experiences do not match those of students whose first language is English (as will be explained below), it may present even more impediments.

Information Literacy and CALD Students

The importance of providing ways to increase understanding of IL has been previously considered by researchers but it has not been widely discussed in relation to CALD students, and in particular to CALD HDR students. By addressing the issue of IL in relation to CALD HDR students specifically, this chapter stands apart from other investigations of IL. According to the Australian Education Network, in 2016, it is common at regional universities for enrolments of CALD students to align with national figures; that is, they comprise approximately 20% of the total enrolment. Almost 10% of postgraduate students in Australian regional universities are

international. These figures indicate that the continuing enrolment, retention, and success of HDR CALD students is therefore of vital importance to the Australian tertiary sector in general but also to regional universities specifically. These figures are congruent with the demographics elsewhere.

Regardless of entry method or language proficiency at entry, the experience of CALD HDR students is different from that of students whose undergraduate studies have been undertaken at Australian universities. Foster (2012, p. 587) comments: "Differences in social and academic culture, academic aptitude or preparation [and] inadequate language fluency [are] problems facing CALD students." The complexity of the issues they face indicates that IL is integral to their successful progress and completion while at the same time being somewhat difficult to attain.

The information relating to IL cannot be embedded into a specific university curriculum, even into a PhD or other type of doctoral program that includes coursework; the focus must extend beyond the supervisor and the university library. That is a major point of our discussion. That being the case, as Curzon (2004, p. 32) points out, although librarians are an essential part of the inculcation of IL, faculty members (and particularly supervisors) but also learning support academics should also be "aware of what information literacy is, why it is important, and what problem it is solving." While this is an important issue, comparatively little research has focused on linking the stakeholders, that is, librarians, learning support academics, and supervisors cooperating in providing learning support to help students. Support would be accessible to all stakeholders and should incorporate a whole-of-campus approach to facilitate the inculcation of IL focusing on their collaborative, interactive responsibilities. By offering new ideas we would ensure that the support develops in the students an ability to recognize information literacy skills and apply them in a progressive, incremental, and cumulative manner throughout their postgraduate study.

By considering IL as an umbrella term for two specific literacies – academic literacy and digital literacy – a deeper understanding is revealed. Each of these is essential to comprehending the pedagogical requirements of CALD students who are studying in Australian tertiary institutions and the demands placed on them.

Academic literacy takes the student beyond the concept of reading and writing effectively: "An academic literacies approach conceptualises writing at the level of epistemology rather than as a set of skills that need to be learnt, or an array of problems that need to be overcome" (Hocking and Fieldhouse 2011, p. 44). Therefore, academic literacy relates to comprehending academic discourse and the way it is produced, structured, and presented. As part of their epistemological approach, students would be expected to both understand and incorporate ideas taken from reading, but this expectation may be problematic. Johnston et al. (2014) cite Hall (2011) who argues that because some cultures are based on an oral tradition, a number of CALD students may find difficulty in reading complex texts. But included in these important aspects of academic literacy are the ability to communicate, to think creatively and critically, and to display both independent learning and the ability to collaborate effectively. All of these elements are important but, as established above, they may need to be carefully encouraged and inculcated in CALD HDR students. The link between reading and understanding, and then the

ability to use the knowledge in a clear and grammatically correct way is a challenge for CALD HDR students.

Digital literacy is now considered to be a broader set of skills than the once prevailing definition of basic skills to perform simple tasks using a computer (Burton et al. 2015, p. 152). It is the ability to use technology effectively, and in the case of tertiary students, it relates to the location, evaluation, and use of information in and on multiple digital formats and platforms. These skills, because they are multifaceted and include the ability to read and interpret while using digital technologies, comprise more than mere competence in computer use. For HDR students, digital literacy covers an essential set of skills that relate to research about their dissertation topic. Digital literacy facilitates "collaborative, interactive and customized modes of learning" (Marstio and Kivelä 2014, p. 66). Many of these learning styles relate to the increased access by students of the internet.

This notion is a point of intersection between digital literacy to academic literacy, but also indicates that: "Education and learning are conducted in diverse places that are physical and virtual in nature" (Marstio and Kivalä, p. 68). At many universities, much information is only accessible online. Significantly, it is typical of a great deal of the support that is offered to students at many regional universities by a language learning support academic to be completed via email, and although the students may find this form of communication useful, they will also need the face-to-face reinforcement.

Research reports that many students believe that because they can search the internet, they are information literate (Stubbings and Franklin 2006). However, sufficient research has been done to throw significant doubt on Prenksy's once ubiquitous notion of the digital native and to indicate the gap in skills between the so-called natives and actual digital demands (Burton et al. 2015).

Although they may not realize this at first, many students have limited digital literacy skills and a limited awareness of the importance of digital literacy. The digital literacy gap includes CALD students, who may have had little access to the internet before studying overseas (Antonio and Tuffley 2014). The large repository of knowledge on the internet, which is an essential part of the information that is available, can only be accessed by those who are digitally literate.

Digital literacy also incorporates a repertoire of competencies that enable people to access, analyze, evaluate, and create messages in a wide variety of media modes, genres, and formats (Buckingham 2003; Hobbs 2005, cited in Kamerer 2013). Identifying point of view is one element, but so too is critical thinking, encompassing the ability to identify bias and assess the potential for misrepresentation. At its core is the ability to research effectively for the purpose of delivering complex oral and written pieces of work, particularly at the postgraduate level; because of its relationship to research, digital literacy is essential for all students, but specifically for CALD HDR students (Pérez et al. 2010, cited in Kamerer 2013, p. 5). One salient feature of digital literacy is that "it is a basic skill, one that supports many others." As with other elements of IL, therefore, it does not stand alone.

These are significant issues, and they provide some early answers to the question: why is it important for CALD HDR students to be information literate? Although

this chapter has already touched on the need for IL, the answers encompass many areas of postgraduate tertiary study. Rockman (2004, p. 9) explains:

> Studies have shown that students are entering college and university environments without fundamental research and information competence skills (for example, the ability to formulate a research question, then efficiently and effectively find, evaluate, synthesize, and ethically use information pertaining to that question).

Here, Rockman is arguing that IL is an essential attribute for students (especially postgraduate students) who need to study effectively. Hayes-Bohanan and Spievak (2008, p. 178) reinforce the point, while expanding on Rockman's proposition: "Information literate students are more likely to … manage their resources more effectively, thus making effective use of content area knowledge and analogies to produce an on-target insightful solution." The effective use of information is clearly essential for all tertiary students. These challenges are especially important for CALD students and in particular for HDR students. However, as Hayes-Bohanan and Spievak (2008) explain, it is often the case that students underestimate both the need for IL and their lack of appropriate skills. It not be until they start to research for their dissertation topic that students are faced with their deficiencies in what Rockman (2004, p. 9) has described as the ability to "formulate a research question, then efficiently and effectively find, evaluate, synthesize, and ethically use information pertaining to that question." These are all real difficulties faced by many students and they require the judicious use of emails supplemented by face-to-face support to help them develop those essential skills over time.

Research

The research cited here will be substantiated by empirical research conducted at one regional Australian university in order to consider effective forms of face-to-face and online support for CALD HDR students. Our study tests issues that have an impact on the success of CALD students to relate to IL (Woodman and Yarlagadda 2015). These issues including the following points.

CALD students in many universities are expected to conform to the norms of Western academia while coming from education systems that are no less valid, but very different. As Peelo and Luxon (2007, p. 68) explain, "students' social, cultural and political background … all signify that learning means different things to different groups." CALD students may already have undergraduate or postgraduate degrees from their home universities and may come from university traditions markedly different from Australian academic culture; despite their extensive academic experience they may lack an understanding of the complexity of IL, as well as its significance for successful progression in their studies. For CALD HDR students to succeed, they must come to terms with the ways of learning that are privileged in Australian universities, which in turn take their cue from universities in the UK and the USA.

While a connection with effective ways of learning is predicated broadly on cultural understanding, it is also more narrowly based on reading for comprehension. For many CALD students, "weak language skills can lead to ... an inability to engage with the learning process" (Murray 2013, p. 300). Students typically arrive at university with minimal English and have a limited time to become proficient. Yet in order to achieve satisfactory progress and learning outcomes, students must be able to access and comprehend academic discourse and be able to use the ideas expressed in texts (Hocking and Fieldhouse 2011). For many CALD students at either undergraduate or postgraduate reading for comprehension is challenging. Badke (2002) is among a number of researchers who point to the lack of appropriate written and oral English skills among CALD students. A background that privileges oral traditions may prove problematic for students. Another major difficulty facing CALD students is that, although much of their language instruction has focused on the written word, reading for understanding (rather than reading by translating word by word) remains challenging for them. Once students move to HDR studies it becomes a more significant problem because of the large number of often complex texts that they will have to read, evaluate, analyze, and then make use of. These difficulties lead into problems with research, when students also need the ability to relate what they are reading to the question to be answered.

An associated difficulty is that writing not just accurate English but academically appropriate English while constructing a coherent argument is often confronting for the students. Rather than being considered merely as a skill to be mastered, academic writing can more properly be considered to be the process of coming to terms with "the complex interplay between linguistic practices, and the social and cultural contexts, and meaning systems, of both the disciplines they are studying and the institutions they are studying in" (Hocking and Fieldhouse 2011, p. 36). In this area students must conform to the norms of Australian tertiary culture. However, for CALD students, Hocking and Fieldhouse explain, this is difficult because they are negotiating so many complex issues while still becoming more accomplished in their use of English.

The challenge that many CALD students face with English skills is a diverse issue that modulates into a problem for library access and use. One problem faced by CALD students is communicating with librarians. As Hughes (2010, p. 79) explains: "Challenges experienced by international students often extend to their ... interactions with library staff." Lack of confidence in expressing themselves clearly, doubt about protocols involved with asking questions, or even uncertainty about whom to approach are all impediments to clear communication in the library. This issue goes beyond mere communication difficulties because the library and the librarian are central to the inculcation of IL.

Hughes (2010, p. 79) indicates that there is often a deeper problem: "Differing language structures may also underlie difficulties international students experience in navigating the library." A significant challenge is that faced by students who are accustomed to reading from right to left having to "source information in a library with a left to right shelving system" (p. 79). In a large physical space, this confusion can lead to added unwillingness to try to access library information.

A library is not a universal constant in terms of form, content, access, or operation. As Liao et al. (2007, p. 6) explain, many CALD students do not have a clear understanding of the way university libraries function. They point to the experience of a number of students with experience of studying in other countries: "Many foreign libraries [do] not have the benefit of open stacks and trained librarians" whereas university libraries in Australia are characterized by both. More specifically, Hughes (2010) conducted a survey among 25 international students at two Australian universities that identified a number of problems relating to library use. These varied from lack of knowledge about the intricacies of library catalogues to lack of awareness about what constitutes an academic library and what it can offer them.

Mehra and Bilal (2007, p. 10) point to an additional difficulty facing CALD students and relating to library use: that of "using digital interfaces mainly due to their inadequate level of English language skills." The interface is the students' point of interaction with an online resource such as databases and catalogues; often visually complex in design and text-heavy in terms of instructions, an interface is a challenging point of contact to navigate. Using web directories in English is obviously problematic for these students. Many have no familiarity with digital resources, especially library catalogues based on the internet and databases, or have little expertise in the use of electronic media, and their lack of proficiency is reflected in the many problems they demonstrate. The lack of understanding can be linked to the information in Hughes's survey revealing that the problem is more deep seated than just unfamiliarity with Australian tertiary libraries: "only eight [of the 25] had previously used a university library" (2010, p. 81). Hughes's research indicates that CALD HDR students' ability to use a library effectively is acutely problematic.

One fundamental aspect of IL is the ability to research effectively. Effective research includes the ability to identify, locate, critically evaluate, and use information, but Hughes and Bruce (2006, p. 36) report that many CALD students have little experience of the type of independent research required for postgraduate study: one reason for this is that students may be "challenged by the . . . problem-based styles of learning and related use of online information resources" that are required at the HDR level (p. 36). This point is where the need for deep learning becomes more apparent. At the same time, when these students are engaging with their postgraduate studies and independent research is more crucial, they are faced with other issues that add to the difficulty of effective research, particularly that of critically evaluating the information they find. Thompson (2013, p. 415) insists that "critical thinking skills are essential in using information and integrating source material into any successful essay or paper." However critical thinking, as part of the research process, and as mentioned above, is one of the aspects of IL that may cause problems for CALD students. Carmichael and Farrell (2012) define critical thinking as: "analysis, making judgements, problem solving, evaluating [and] questioning." However, as Hughes and Bruce (2006, p. 36) have ascertained, many CALD students have an "unreflective, non-critical approach to all aspects of the search process, especially the evaluation and selection of suitable resources." The choice of information, together with careful assessment of the information, is crucial to effective research. These research problems that are intensified by a lack of critical thinking will inevitably have an adverse effect on the

quality of the work prepared by CALD HDR students. Moreover, critical thinking depends on a confident command of the resources of language (UWA 2008) and, as established above, many CALD students have inadequate language skills. All of these factors can impact on CALD students' approach to study because: "There is a convergence between information literacy skills and academic learning skills" (Kimmins and Stagg 2009, p. 1). The point made by Kimmins and Stagg reinforces both the importance and also the complexity of information literacy. This is one of the areas where individual attention can be crucial for students so that they can develop their language use, their understanding, and their critical thinking skills.

Tertiary students, as pointed out by Johnston and Webber (2003, p. 336), require "information well fitted to information needs, together with critical awareness of the importance of wise and ethical use of information in society." The ability to use research material is closely allied to the appropriate use of information, an issue that is especially pertinent to CALD HDR students, and this brings us to the multifaceted matter of plagiarism. Yeh (2009), cited in Johnston et al. (2014), points to an issue that is closely aligned with the struggle to read and comprehend: HDR students often have difficulty in paraphrasing texts in English because their reading skills are limited. Stubbings and Franklin (2006, p. 3) point out that the problem related to plagiarism in tertiary institutions is often compounded by students' misunderstandings of the way to locate information and the importance of acknowledging sources. Fawley (2007, p. 72) widens the debate, questioning whether cultural differences are responsible for plagiarism among CALD students studying in Australia. In many educational cultures, Fawley contends, the process of studying has been based on rote learning where there is no opportunity to think critically about the material being read. A further problem can relate to cultures where the focus is the group rather than the individual, so collaboration is not perceived as plagiarism and many have little or no experience of the difference between independent and collaborative study. And finally, although the difficulty in reading and understanding complex sources is by no means confined to CALD students, they may face specific problems, and that complicate the issue of plagiarism. When a student is using English to communicate, lack of confidence in their ability to read and understand, write cohesively, using correct grammar, sentence structure, and even in- and end-text referencing, may encourage them to copy from a source. For CALD HDR students, this can be a significant problem.

Many students, but particularly CALD students, may be overwhelmed by affective issues, relating to cultural issues, to the university in general, to the programs of study (and particularly HDR study), and to the library, which is central to their research, and on which so much of student work depends. University libraries are large and complex spaces in both actual and virtual realms. As Hughes (2010, p. 80) comments: "the affective dimension is connected with both the environmental and cultural-linguistic dimensions. . .. Challenges in using the library may cause feelings of confusion, anxiety or frustration." For students, these feelings may coalesce with language difficulties, with comprehension of not just the material but also the learning styles, and an unwillingness to display independent learning skills and may impede the free access to information required by the students. These affective issues bring together many of the problems facing CALD students.

Collectively, these issues reinforce the centrality of IL to the success of students who are faced with the challenge of negotiating complex information sources and modes of study. The problems outlined above indicate that sector wide, current forms of preparation are inadequate. IL is therefore a significant factor in student achievement, but it is equally important (but perhaps more difficult to achieve) for CALD HDR students. As explained above, adjusting to academic life in Australia may pose specific problems for CALD students.

Meeting the IL Needs of CALD Students

Who should be concerned with and concerned about IL for CALD students? Prior research has suggested different stakeholders (librarians, academics, CALD students, or disciplines such as information science), but our emphasis extends beyond specific or separated realms of operation. In particular, librarians have often been the focus of the inculcation of IL. The library is critical to many aspects of IL; however, it must be made clear that, as Breivik (2004, p. xii) explains, "information literacy is a learning issue not a library issue." More specifically: "Information literacy is about understanding information and how it works" (Badke 2010, p. 130). Thus, as Badke comments, the notion of understanding information implies far more than using a library whether in virtual or physical modes. It must be recognized that the literacy problems being experienced by students and the provision of appropriate support are complex issues, so it is essential that any support and any learning resources that are developed to inculcate IL are as effective, targeted, yet comprehensive as possible.

The Inculcation of IL

The research outlined above indicates the challenges faced by CALD HDR students. This chapter will now move on to provide a brief outline an effective way to inculcate IL for CALD students who are undertaking the first stages of a postgraduate degree at an Australian university. As mentioned above, support is most effective if it is provided by a range of people, including research librarians, supervisors, and a learning support academic who are available on site for students. These support systems include the following factors.

At the regional university that is the focus of this study, it was determined that because CALD HDR students were in need of quite targeted and specific support in relation to IL, a program would be instituted. Over the past 2 years, the university's Office of Research and Graduate Studies has sent out invitations to students to register their interest in being involved in the program. In 2016, 20 students were involved. In 2017, 40 students are participating. These students come from diverse cultural and linguistic backgrounds. The program is flexible and is targeted to the needs of individual students. Students may be at any stage in their postgraduate studies, from preparing for confirmation to being ready to

submit their dissertation. They may be writing journal articles or preparing conference presentations. The program operates in a way that is student directed yet under the guidance of a lecturer and with liaison with librarians and learning support academics. Students are able to consult at any time, to ask questions about the development of their academic writing, and to receive guidance. Their focus may be reading, thinking critically about what they have read, constructing their argument, or writing clearly, using correct grammar. Online contact is reinforced by one-on-one meetings with the learning support academic. Students send in work when they feel it is ready to be appraised; this is then returned, and typically, students will make an appointment to ask questions that need further clarification. A great deal of time is spent communicating with students to maintain the momentum with their work and at the same time to create a community of learners.

Information about information literacy and support for the students is provided by research librarians, including:

– Classes on the use of Endnote
  One-on-one help about the following issues that relate to information literacy
– Establishing a research profile
– Measuring, maximizing, and managing research impact
– Increasing research impact using social media
– Data management
– Setting up the students' ORCID affiliation

The Learning Advisor (HDR) provides information on the following topics that also increase the students understanding on information literacy:

– Managing supervisory relationships
– Critical thinking
– Project design and management
– Reviewing literature
– Preparing for confirmation
– Conference presentations
– Thesis writing

Academic Writing Boot Camps are held three times a year and are specifically targeted to HDR students. Because CALD students mingle with other HDR students, their horizons and their fields of experience are broadened. These Boot Camps provide students with the opportunity to write in an intensive way and to spend dedicated time with professorial staff who can provide expert advice on writing either a dissertation or a journal article.

One academic presentation workshop is held each year, intended to extend the range and expertise of HDR students. Again, comingling with a variety of students gives a broader experience to the CALD students.

Survey Data and Analysis

Students who take part in the support initiatives offered at this university were invited to participate in a one-off hybrid of a questionnaire and semi-structured interview whereby some written answers were followed by further oral questions with answers notated. A heterogeneous sample of 11 students participated, based on convenience sampling. Questions focused on the stakeholders and support systems the students use or need in relation to specific aspects of IL. Each participant is an international student and each speaks English as a second language. Qualitative data from the interviews was thematically analyzed. The participants have been enrolled in their Higher Degree by Research for various periods of time, including pre-confirmation, post-confirmation, and some near to completion. This variety of experiences provides in turn a rich number of perspectives. Nonetheless, a common early theme across many interviews was that participants had not previously conceptualized "information literacy" or thought of themselves as embodying or acting in ways that were demonstrably information literate. Some had even googled "information literacy" after being invited to participate. Each interview opened however with the participant being presented with a list of actions and abilities which comprise being information literate and in these lists they could recognize actions or attributes they possess. Thus, while they did not have a self-identity as "information literate," they could recognize in themselves ways they were information literate or reasons they needed to be so.

Being an Information Literate Student

In response to a question whether or not they could explain the importance of information literacy in postgraduate studies, participants explained "you need to have a good understanding of the tools the university provides to be successful." "Because I work with data, it is important to interpret the numbers that [I] put in my manuscripts." Even though they had not thought of themselves in direct terms as information literate students, participants knew that "It is important so that I am sure that I get credible information that I can depend on." "In a PhD we will collect big data sets and then we have to manage and analyse them in order to come up with meaningful conclusions. In scientific studies managing an information library of literature related to our research problem, analysing the problem with available data is very important to disseminate our research findings."

Elements of Information Literacy

Participants were asked to identify (from a list provided: see "Appendix") the aspect of IL that they considered most important to the undertaking of their Higher Degree by Research. The ability to "think critically about information" emerged as a core need, but some participants took the idea further and recognized that as "second stage" and something only obtainable some way into a higher degree. Thinking

critically was also a precursor to the conceptual organization of ideas, whereby "thinking critically leads to an array of thoughts, which are generally structure-less. Then to construct a proper sense from them requires a great deal of hard work." Or thinking critically was a pathway to locating information, as it "will give me insight on finding more relevant papers" or obtaining valid results.

Becoming Information Literate

This chapter has already pointed out that although librarians are significant stakeholders they are not, as has been suggested in the past, the most significant sources of IL support. An important theme emerged from the survey: sources of support were multifaceted and found in a diversity of locations. Initially, when asked if their dissertation supervisors had any responsibility for inculcating information literature, participants did not immediately think their supervisors were responsible for developing students' information literacy. But again after being asked to consult a list of actions and attributes of information literacy (see "Appendix"), participants rethought that initial impression. One participant considered that their supervisor was there for "any subject matter related problems." However, this participant then added "They offer me help to critically analyse information and guide me to think further about it." Some thought as of their supervisors as stakeholders in becoming information literate. "Supervisors were my knowledge bank." Supervisors could also "help me to extend my ideas." In seeking support, a combination of supervisors, research librarians, a postgraduate student advisor, and dedicated language support emerged as an interlocking web of human resources.

From these different strands of support, participants recounted a range of capacities. "The research librarian helped me to expand my knowledge on how to formulate a research question" and library classes and librarians gave access to online information. But grammar and language, the structure of academic writing, and accessing templates of best practice, emerged as aspects of information literacy that were supported by a number of sources. The development of language emerged as being intertwined with the development of research ability: "The learning support academic has helped me to improve my language and therefore my research skills so that I can understand what I am reading and think about the information." Targeted language support therefore took a place as an aspect of information literacy. So too did the workshops on academic writing and presenting. Students who participated in the workshop on academic writing found that "it taught me how to organise my ideas clearly" and the workshop on presenting "improved my confidence in expressing my research ideas."

Conclusions

Information literacy (IL) is an essential attribute for all tertiary students, but its importance for CALD HDR students cannot be overstated. In brief, IL consists of the following elements:

- The ability to identify, retrieve, evaluate, adapt, and organize information
- The ability to comprehend academic discourse
- The ability to think creatively and critically
- The ability to work both independently *and* collaboratively
- The ability to use technology effectively
- The ability to access, analyze, evaluate, and create messages in a wide variety of media modes, genres, and formats.
- The ability to communicate ethically within a context of review and reflection

This important overview of IL should be sufficient to alert those in the tertiary education sector to the role that IL plays in the successful negotiation of academic discourse, particularly for CALD HDR students. The question then is not only the significance of IL but the most effective way of inculcating it. One of the most important factors is the benefit that comes from teaching IL in an accessible way across the tertiary sector. Traditionally, IL has been taught on campus by tertiary librarians, but it is the contention of this chapter that an effective learning and teaching resource is not solely based on the input of librarians nor of traditional written material, but is in fact located in a broad spectrum of academics and other university staff members who can provide support, advice, and encouragement on both an individual and a group level. Inculcating IL in this way underlines its importance but also provides much-needed reinforcement of the skills required by CALD HDR students.

Appendix

Elements of information literacy shown to participants

- The ability to find relevant information, using library resources
- The ability to access online sources
- The ability to understand information
- The ability to think critically about the information
- The ability to use the information for writing academic work
- The ability to understand the way academic writing is structured and presented
- The ability to write in a way that is clear, coherent, and grammatically correct
- The ability to use information ethically
- The ability to confer with academics (including the learning support academic)

References

Aharony, N. 2006. The use of deep and surface learning strategies among students learning English as a foreign language in an Internet environment. *British Journal of Educational Psychology* 76: 851–866.

Andretta, S. 2007. Phenomenography: A conceptual framework for information literacy education. *Aslib Proceedings: New Information Perspectives* 59 (2): 152–168.

Antonio, A., and D. Tuffley. 2014. Digital literacy in the developing world: A gender gap. The Conversation. http://theconversation.com/digital-literacy-in-the-developing-world-a-gender-gap.
Asher, C. 2003. Separate but equal: Librarians, academics and information literacy. *Australian Academic & Research Libraries* 34 (1): 52–55.
Australian Government. 2016. Department of Education and Training 2016, *International Student Data*, Australian Government, Canberra.
Badke, W. 2002. International students: Information literacy or academic literacy? *Academic Exchange Quarterly* 6 (4): 1–5.
Badke, W. 2010. Why information literacy is invisible. *Communications in information literacy*, 24 (2): 129–141.
Bent, M., P. Gannon-Leary, and J. Webb. 2007. Information literacy in a researcher's learning life: Seven ages of research. *New Review of Information Networking* 13: 81–99.
Breivik, P.S. 2004. Foreword. In *Integrating information literacy into the higher education curriculum: Practical models for transformation*, ed. IF Rockman and Associates. San Francisco: Jossey-Bass.
Burton, L.J., J. Summers, J. Lawrence, K. Noble, and P. Gibbings. 2015. Digital literacy in higher education: The rhetoric and the reality. In *Myths in education, learning and teaching: Policies, practices and principles*, ed. M.K. Harmes, H. Huijser, and P.A. Danaher. Basingstoke: Palgrave Macmillan.
Carmichael, E., and H. Farrell. 2012. Evaluation of the effectiveness of online resources in developing student critical thinking: Review of literature and case study of a critical thinking site. *Journal of University Teaching & Learning Practice* 9 (1): 1–17. Viewed 02 Dec 2015. http://ro.uow.edu.au/jutlp/.
Coonan, E. 2011. A new curriculum for information literacy: Transitional, transferable, transformational. Theoretical background: Teaching learning: Perceptions of information literacy. *Arcadia Project*. Cambridge: Cambridge University Library.
Curzon, S.C. 2004. Developing faculty-librarian partnerships in information literacy. In *Integrating information literacy into the higher education curriculum: Practical models for transformation*, ed. IF Rockman and Associates. San Francisco: Jossey-Bass.
Ethnic Communities' Council of Victoria. 2012. Coburg, Victoria.
Fawley, N. 2007. Plagiarism pitfalls: Addressing cultural differences in the misuse of sources. *The International Journal of Learning* 14 (7): 71–74.
Foster, G. 2012. The impact of international students on measured learning and standards in Australian higher education. *Economics of Education Review* 31: 587–600.
Hayes-Bohanan, P., and E. Spievak. 2008. You can lead students to courses, but can you make them think? *College and Undergraduate Libraries* 15 (1–2): 173–210.
Hocking, D., and W. Fieldhouse. 2011. Implementing academic literacies in practice. *New Zealand Journal of Educational Studies* 46 (1): 35–47.
Hughes, H. 2010. International students' experiences of university libraries and librarians. *Australian Academic and Research Libraries* 41 (2): 77–89.
Hughes, H.E., and C.S. Bruce. 2006. Cultural diversity and educational inclusivity: International students' use of online information. *International Journal of Learning* 12 (9): 1–9.
Johnston, B., and S. Webber. 2003. Information literacy in higher education: A review and case study. *Studies in Higher Education* 28 (3): 335–352.
Johnston, N., H. Partridge, and H. Hughes. 2014. Understanding the information literacy experiences of EFL (English as a foreign language) students. *Reference Services Review* 42 (4): 552–568.
Kammerer, D. 2013. Media literacy. *Communication Research Trends* 32 (1): 4–25.
Kimmins, L., and A. Stagg. 2009. Creating confidence: Developing academic skills and information literacy behaviours to support the precepts of tertiary academic performance. 4th Asia Pacific Conference on Educational Integrity, 28–30 Sept 2009, 1–9.
Liao, Y, M. Finn and J. Lu. 2007. Information -seeking behavious of international graduate students vs. American graduate students: a user study at Virginia Tech 2005. *College and Research Libraries*, 68 (1):5–25.

Marstio, T., and S. Kivelä. 2014. Technology enhanced learning in a higher education context: Building bridges by student empowerment and regional development. *Nordic Journal of Digital Literacy* 9 (1): 66–87.

Marton, F. 1994. Phenomenography. In *The international encyclopedia of education*, ed. T. Husén and N. Postlethwaite, vol. 8, 2nd ed., 4424–4429. Oxford: Pergamon Press.

Mehra, B., and D. Bilal. 2007. International students' perceptions of their information seeking strategies. Proceedings of the 2007 Canadian Association for Information Science (CAIS/ACSI), Montreal, 10–12 May 2007. Retrieved 4 Dec 2014, from http://www.cais-acsi.ca/proceedings/2007/mehra_2007.pdf.

Murray, N. 2013. Widening participation and English language proficiency: A convergence with implications for assessment practices in higher education. *Studies in Higher Education* 38 (2): 299–311.

Peelo, M., and T. Luxon. 2007. Designing embedded courses to support international students' cultural and academic adjustment in the UK. *Journal of Further and Higher Education* 31 (1): 65–76.

Rockman, I.F. 2004. Introduction. In *Integrating information literacy into the higher education curriculum: Practical models for transformation*, ed. IF Rockman and Associates. San Francisco: Jossey-Bass.

Stubbings, R., and G. Franklin. 2006. Does advocacy help to embed information literacy into the curriculum? A case study. *Innovation in Teaching and Learning in Information and Computer Sciences* 5 (1): 1–11.

Thompson, M.S. 2013. Melding the nitty gritty of critical thinking and information literacy into English developmental and composition classes. *The Association of College & Research Libraries*, 10–13 Apr, 414–422.

Woodman, K., and P. Yarlagadda. 2015. Is there a difference between supervising international and domestic graduate students in engineering and IT? Proceedings of EDULEARN 15 Conference, 6th–8th July 2015, Barcelona.

Yarlagadda, P., K. Woodman, P. Silva, A. Taji, T. Samaha, J. Trevelyan, S. Samani, H. Sharda, R. Narayanaswamy, and A. Lucey. 2013. *A model for research supervision of international students in engineering and information technology disciplines*. Sydney: Australian Government Office for Learning and Teaching (OLT).

Zurkowski, P.G., and The National Commission of Libraries and Information Science. 1974. *The information service environment relationships and priorities: Related paper no. 5*. Washington, DC: National Program for Library and Information Services.

Part II

Graduate Students and Digital Futures

Blogging: Connecting Research Communities Online

9

Claire Aitchison, Susan Carter, and Cally Guerin

Contents

Abstract

The demand for higher degree research qualifications is growing in response to the requirements of the knowledge economy, greater international competition for and mobility of students, and increased demand for research and researchers. As institutions struggle to keep up with the changing forms and requirements of doctoral education, students and supervisors appear to be turning to alternative spaces for learning and networking, notably in the sphere of social media.

This chapter reports on the establishment of an academic blog on doctoral writing, *DoctoralWritingSIG*. We draw on notions of connectivism (Downes, Connectivism and connective knowledge: Essays on meaning and learning

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networks. Stephen Downes Web. Available at http://www.downes.ca/files/Connective_Knowledge-19May2012.pdf. 2012; Siemens and Mattheos, Education 16(1):3–18, 2010) to describe how the blog developed its own community networked across countries and disciplines bringing doctoral students into fruitful exchange with a wide set of doctoral educators.

Keywords
Graduate student writing · Online learning communities · Social media

Introduction

A unique confluence of pressures and changes in higher education – and particularly in research education – has propagated an extraordinary assortment of responses that harness the affordances of technology. Social media, especially, has empowered entrepreneurial individuals to create vibrant communities, often independent from their institutional homes, for the purposes of collegial support and for the co-construction and exchange of knowledge and practices.

Much literature suggests that the doctoral student experience has historically been characterized by a lack of community, leaving students feeling isolated and unsupported (Pyhältö et al. 2009). Metaphors of solitary endurance abound (Aitchison and Mowbray 2013; McCulloch 2013). The intensely personal pedagogical space of doctoral supervision (Grant 2010) and the accelerated, competitive, and audited state of contemporary academic life (Billot 2010) may well also be contributing to feelings of isolation and alienation within the tenured and "precariat" academic workforce (Carrigan 2015). In addition, it has long been recognized that doctoral writing is a difficult, and often lonely, task (Lee and Williams 1999) for which appropriate help is not always available (Kamler and Thomson 2014). Even diligent supervisors may find it hard to give good advice on how to develop doctoral writing (Carter and Kumar 2016; Paré 2011).

Seemingly at odds with these circumstances, there has recently been a remarkable explosion of communities of researchers networking online. Every day, individuals interact through blogging, Facebook, and Tweeting, and these activities are increasingly incorporated into researcher behaviors as natural and routine forums for social and professional exchange. Global communities of student researchers use social media as platforms for communicating research: for disseminating work, for asking questions and receiving advice, for profile building, for learning skills, and for reflection throughout the processes of doctoral candidature (Carrigan 2016).

Less well recognized is the relatively slower, but nevertheless important, uptake of social media by more established academics. Early studies of such activities show that academics value the collegiality arising from participating in online communities or "virtual staff rooms" (Mewburn and Thomson 2013). As well, academics reap the benefits of professional exchange and information dissemination (Carrigan 2016).

In this chapter, we outline how the *DoctoralWritingSIG* blog developed as a networked community across countries and disciplines to connect students with a

wide variety of doctoral educators. We use the conceptual frames of connectivism (Downes 2012; Siemens and Mattheos 2010) and community of practice (Wenger 1998) to explore the unexpected popularity of the blog among research students and how traditional pedagogical spaces of student and supervisor are expanded and hybridized in this environment. We use these two theoretical frames as we reflect on the still evolving practices that bind us as a community of bloggers, followers, and readers.

Research Supervision: Opening the Closed Space to Community

It is clear that the rapidly changing doctoral education environment is spawning a plethora of national, institutional, and individual responses in the provisioning of higher degree programs and researcher development. Within the pedagogical space of doctoral education, technology and community are centrally implicated.

At the coalface, learning how to *do* research and *be* a researcher is no longer exclusively the terrain of the student–supervisor dyad. Alongside massive and global shifts in the way that research education is perceived, funded, and stimulated by high levels of student mobility and diversity within a hugely competitive global "knowledge economy," this previously confined pedagogical space has opened out (Fourie-Malherbe et al. 2016; Nerad and Evans 2014). Ownership of and responsibility for learning is more dissipated and dispersed. Research degree study now involves a variety of learning sites including voluntary and compulsory coursework, departmental programs, and student and supervisor development opportunities provided by central units such as graduate schools, learning centers, and academic development units. And, aided by the online environment, these expanded pedagogical spaces include globally networked online forums ranging from sanctioned fee-paying programs to independent, free, community-oriented doctoral education goods and services (Aitchison and Mowbray 2015).

This busy, conflicted, and changing environment harbors tensions between older entrenched practices and the energetic embrace of the new. The clash is most acute in the pedagogical spaces of supervision. On one hand, digital innovation abounds, and on the other, some research reports that doctoral students and their supervisors are relatively slow to take these innovations into their workspaces (Dowling and Wilson 2015; Sim 2015). This reluctance may arise from an understandable hesitation to take risks in a context of accelerated pressures for performance and output (Aitchison et al. 2015). Doctoral supervision and doctoral scholarship operate at the pinnacle of academic endeavor, and yet, until recently, there has been limited research and scholarship in the field, perhaps prolonging the resistance to new pedagogical approaches in some quarters. Nevertheless, while relatively few technology-enhanced modes are being embraced by institutions, a huge revolution is occurring outside their direct purview.

Online digital technologies are essential to contemporary research scholarship. These technologies have not only transformed the way that we do research (consider, e.g., big data repositories and algorithms) but also how we write about (e.g., online

immediate translation, grammar and editing, and automated writing technologies) and disseminate research (epublishing, blogging, and digital databases). There has never been so much academic output so widely available both through traditional channels and via alternative modes. Increasingly we see social media operating, in tandem or independently, to promote, recirculate, critique, and appropriate this information and these forms of information (Carrigan 2016). For example, academic blogs and blogging are increasingly part of the doctoral student experience. Blogs such as the *ThesisWhisperer* (52,000 followers) and *PhD2Published* (3.2K likes) have an extraordinary global reach (Retrieved from *ThesisWhisperer* website 16 May 2016 and from *PhD2Published* website 16 May 2016).

The proliferation of technologies and software such as Twitter, Facebook, LinkedIn, Tumblr, YouTube, Google+, WhatsApp, Snapchat, Pinterest, Flickr, and Instagram expands opportunities for connecting scholars into dynamic communities centered around disciplinary homes, personal, or research interests. Such "open participatory practices" are enabled by "global and continual connectivity" (Siemens and Mattheos 2010).

"Connectivism" is a theory of learning that takes account of how both information and people are connected, with a particular focus on digital networks (Downes 2012; Siemens and Mattheos 2010). This perspective understands knowledge as "distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks" (Downes 2012: 9). Going further, Downes explains:

> Knowledge is literally the set of connections between entities [. . .] Learning is the creation and removal of connections between the entities, or the adjustment of the strengths of those connections. A learning theory is, literally, a theory describing how these connections are created or adjusted.

Connectivism is intimately linked with the rise of "social and participative web [Web 2.0]" technologies which have afforded "new modes of creating, validating, disseminating, and reusing information" (Siemens and Mattheos 2010). In this digital environment, individuals become creators of knowledge as they participate in the sharing of ideas and opinions, often via social media.

Successful doctoral writing requires high levels of dexterity to identify and manage multiple knowledge domains and social networks. Learning for doctoral candidates means that they are identifying connections between pieces of knowledge and sometimes creating radically new connections between existing ideas. The learning undertaken during a PhD requires the independent navigation of the vast networks of information that already constitute a chosen field. Students must demonstrate a comprehensive understanding of how scholars have made connections between items of knowledge, as well as an appreciation of the nuances of the strength or weakness of various connections. For example, writing a literature review requires categorizing (i.e., grouping some pieces of information in the ways that they are connected to each other and delineating the separations or disconnections between those bundles) and articulating a hierarchy of knowledge

in the given field (i.e., making connections between those categories). In turn, those new connections are critiqued by other scholars linking into the networks of scholarship.

The connections afforded by social media, and especially academic blogs, are representative of an expanded scholarship and of new and democratized ways of undertaking scholarship. Blogs have the potential to alter not only the distribution but also the production of knowledge. As Bouwma-Gearhart and Bess (2012: 250) argue:

> The use of the blog for communication of in-process research and ideas may constitute not only an improvement in academic productivity but a significant transformation of the very culture of academic research.

Blogs can engage authors, collaborators, discussants, and reviewers in the production of knowledge simultaneously at the points of construction and dissemination. These kinds of knowledge communities are no longer bounded by time and space, nor even disciplinary and institutional norms. Arguably, there is a radical shift occurring between cognition, expression, and identity construction (Carter et al. 2014). Blogs create a space for new constructs to emerge.

Blogs and blogging communities range from individual, highly personal sites to professional, collaborative, steered topic-specific blogs. "Boundaried communities of bloggers" are likely to be smaller communities with heightened levels of trust by virtue of the limited numbers of identified users and restricted participation (Katz 2001). Other blogs are fully open to readers but may have restrictions around authoring rights and content, with centrally monitored participation. Some blogs bring communities of writers together to coauthor in real time.

Garrison and Anderson (2003) argue that blogs establish community by *social* and *cognitive* presence particularly because the nature of blogging is to foreground reflection. Blog posts are more likely to be understood by both the author and the reader as thought-in-process than other forms of academic work. In this way, the blog operates as a third space, an "invisible college" for academic discourse "to move thought into the social realm, by presenting facts, ideas, and requests for assistance – and ultimately build knowledge" (Halavais 2006: 120) – and intellectual and social connections beyond corridor conversations.

The growing popularity of blogs is evidence of interest in this more open, democratized way of operating. For researchers, especially those in isolated communities, who are doing independent research or with unsatisfying supervision, the community and the learning opportunities offered by blogging are a welcome and powerful addition to doctoral scholarship. In addition, doctoral researchers look to these digital platforms as places where informal learning occurs: here they can connect with others who share their research interests, develop fruitful exchanges with peers (instead of with established "authorities"), and actively participate in creating knowledge by collectively thinking online.

Connectivism describes knowledge in terms of networks created from "nodes" and the connections between those nodes. These metaphorical "nodes" can be bodies

of knowledge or information, or people who hold that knowledge, or resources (such as blogs, websites, and traditional publications). Learning occurs at points of connection between people, ideas, and artifacts. The *DoctoralWritingSIG* website can thus be understood as a node or "hub" that creates a social network, bringing people together online to share their ideas as readers, writers, and commenters. In turn, this node then ripples out in multiple directions continually (re)connecting ideas across the web.

DoctoralWritingSIG blogs on issues concerning doctoral writing in its broadest interpretation. The blog style includes personal reflective posts as well as extensive information about writing pedagogies and practices. Posts that share personal experiences and that deal with practical applications of writing pedagogies seem to attract doctoral students. We suspect that this is partly because it allows novice scholars to seek specific information at the moment it is relevant for them. A blog can facilitate knowledge production at several levels: it is possible to read posts entirely anonymously, to comment on ideas presented, or to contribute a blog on a topic of interest. *DoctoralWritingSIG* authors include both doctoral students and credentialized academics, writing teachers, and other doctoral education practitioners. Thus, in our experience, the blog seems to have facilitated movement into a community of practice through degrees of legitimate peripheral participation (Lave and Wenger 1991). Our community of readers and contributors learn by watching and through participation.

Next we document more extensively our experiences of how connectivism and community operate in the *DoctoralWritingSIG* as we review its origins and operations.

The Origins and Purposes of the *DoctoralWritingSIG*

The *DoctoralWritingSIG* is edited by three academics from different institutions located in different towns and countries. This cross-border collaboration emerged from recognition at the 2012 Quality in Postgraduate Research Conference of a shared interest in the complex practices of doctoral writing. We wanted to investigate and address the challenges of doctoral writing, "the problems of knowledge production, text production and self-formation [that] are complexly intertwined at the point of articulation" (Aitchison and Lee 2006: 268). Because doctoral writing entails a transition of academic identity within the social context of gaining acceptance into a discourse community, learning how to make these multi-purposed maneuvers frequently puts emotional stress on students and supervisors. Often, too, students and supervisors have different expectations of how to manage the feedback, response, and feedforward cycle (Carter and Kumar 2016). Our aim was to create a forum for those involved with doctoral writing by building a networked community of academic developers, academic language and literacy specialists, and supervisors – and, we thought, perhaps some doctoral students may be interested too. More needed to be said, we felt, about the intriguing, perplexing, and often vexatious practices of doctoral writing and its support.

The 2012 Quality in Postgraduate Research (QPR) Conference established a Special Interest Group (SIG), which we, the authors here, offered to facilitate. Initially, we proposed a listserv for sharing ideas and resources. However, encouraged by Inger Mewburn, well-known for her blog the *Thesis Whisperer*, we experimented with an expanded, open forum and eventually established the blog.

We manage the blog by taking turns in 4-weekly blocks to author posts and maintain the site: answering emails and accepting comments, retweeting, and occasionally reblogging the posts of other bloggers. Each post is usually reviewed by all three editors so that we perform the process of giving and responding to feedback even as we write. We have written elsewhere about the way that the blog community sustains us individually and benefits our work within our institutions (Guerin et al. 2015).

Although we produce traditional, scholarly publications about doctoral writing (e.g., Aitchison and Lee 2006; Badenhorst and Guerin 2016; Carter 2012), the blog allows us a vibrant space for reflective writing. The blog site lets us experiment with ideas that emerge from teaching within our institutions, which in turn may develop into research articles and always feed back into our teaching practices. There is a mutuality of transaction: often posts emerge from bits of our own research or from teaching material that we use in classrooms or as supervisors. An organic cycle of ideas, thinking, and recognition of the problematics we see in doctoral writing practice smoothes the fragmentation that results from the pressurized neoliberal environment.

The Communities and Practices of *DoctoralWritingSIG*

From our beginnings in 2012, we noticed a growing readership, including, to our initial surprise, a large following of doctoral scholars who significantly expanded our community beyond our initial target of other academics and supporters of doctoral writing. There is satisfaction in the fact that this extended community more accurately reflects the fluidity of doctoral education, revealing the shifting identities of doctoral and supervision scholarship and a more distributed learning space. Our blog incorporates those who make up the social biosphere of doctoral writing with its various layers of pleasures, conflicts, and challenges.

Our blog posts cover many interrelated aspects of doctoral writing that emerge from working within this community. As we analyze 4 years of weekly posts, a number of recurring themes are evident: feedback on writing; close-up, sentence level concerns; digital technologies for writing support; researcher identities and experiences as writers; and how doctoral writers negotiate research cultures.

Working across these categories, we note the individual embodied student and supervisor experience and the emotions and identities of those who sit around the writing table. Responses to blog posts confirm that heightened emotions seem endemic in the exchanges around doctoral writing and erupting from the pressures of writing time management (Carter and Laurs 2018; Morrison-Saunders et al. 2010). The post that has attracted the most comments is on mother guilt and the doctorate. It

addresses the dual identities and roles that doctoral student mothers need to mesh together, admitting to the guilt that is often felt about neglecting children in favor of doctoral study. Exchanges continue years on with commenters building community by encouraging and supporting each other.

The human dimensions of those significant networks of support beyond supervision are important (Aitchison and Guerin 2014). The post with the most views is on writing the thesis acknowledgement page and observing the etiquette of thanking appropriately. We think it attracts interest because there is little advice on how to appropriately execute this important social and academic etiquette. People matter in the identity transition of doctoral candidates. Connectivism's emphasis on the links between people, ideas, and artifacts is demonstrated in the reader engagement with the blog posts.

Then there are textual negotiations. The doctorate is defined by its *written* demonstration of conceptual expertise. Sometimes blog posts unpick the generic expectations of the doctorate or the mechanics of language. Increasingly, software applications support doctoral writing and supervision exchanges, so one series was given to the various tools that academics and students use. In this series, guest authors shared their experiences about what worked nicely and what was problematic: the series enabled communal exploration of that developing practice where reluctance to take up digital affordance signals a need for practical advice.

Our guest authors contribute substantially, building this knowledge community as a human network of support and collegiality. *DoctoralWritingSIG* guest authors include doctoral students as well as other doctoral education workers. Guest bloggers may email us with a proposal for a post, and at other times, we identify them – perhaps following a published paper or conference presentation or through local exchanges about practice. Guest authors submit posts that we subject to the same editing that we give our own.

Possible Futures and Implications for Distributed Pedagogical Practices: New Communities for Learning and Belonging

Our experience of creating a community of practice (Wenger 1998) engaged in "networked participatory scholarship" (Veletsianos and Kimmons 2012) occurred at the intersection of an apparent lack of helpful spaces for genuine conversations about good practice, combined with the ready ubiquity of social media as a vehicle for our objectives. We set out rather naively to work in a medium about which we knew very little, and over time we discovered new ways of working and building knowledge and community. But, what of the future? Is this kind of activity a legitimate and sustainable academic endeavor? What is the future for self-starters like us operating outside formal institutional structures? Is this a model that could be taken up by institutions? And if so, what might be the ramifications, benefits, and cautions?

Blogs have many different styles and models of ownership, formulation, and management. Recognizing the power of social media, few universities these days would not have a host of social media platforms closely integrated into advertising

and image management strategies. Increasingly in education we see examples of social media being taken into the mainstream. Social media – especially blogs – are now commonly integrated into learning environments. Institutions are also seeing the benefit of institutional blog spaces that are semi-independent of specific courses, disciplines, and faculties. Sierra Williams argues that university-managed blogs offer a more realistic space for the exchange of ideas than the "outdatedly atomized" institutional disciplinary structures (2016). The London School of Economics is one example where an institution's profile has benefited significantly through the *Impact of Social Sciences* blog: "considering investment and running costs, university blogs certainly punch above their weight" (Williams 2016).

The Conversation is an example of formal academic "blogging" funded by universities for a broad reading audience. This online "newspaper" now has editorial operations in Africa, the UK, the USA, and France, as well as in Australia where it originated. *The Conversation* is funded by contributing universities and has a considerable reputation.

There are simultaneously a growing number of independent academic bloggers and blog sites, about which there is little research. They vary in quality and longevity, and (in keeping with the nature of blogging) many seem to evolve and change over time. It sometimes appears these forms are uncertain of their purpose and audience. They are mostly seen as adjunct activities conducted outside the main work of academic scholarship. The fluctuation and fragility of blogs calls for research into why some blogs founder where others increase in profile. We suspect that in part ours has thrived to date because the three of us work supportively together and benefit substantially from this connection in our lives. The blog also creates a space for the kind of reflection on practice that has very few alternative outlets in doctoral education particularly.

When we established the *DoctoralWritingSIG* blog, our endeavor from the outset was educational and collegial. This mandate raises particular issues: How is legitimacy determined? Who are the "imagined" colleagues? In our case, our association with a major international conference (QPR), our public persona as published academics, and our individual connections to institutions provide a certain degree of "legitimacy" and authority. However, the blog is not formally associated in the sense that these connections provide funding or oversight, nor are we restricted through formal obligations. We (so far) have operated freely in terms of our content and practices. On the other hand, we recognize that the "good reputation" of the blog is something that needs to be carefully maintained, and we feel a high degree of responsibility as its custodians to ensure high standards, accuracy, reliability, and value. This involves a high degree of self-awareness and common perspectives about quality, value, and usefulness between the three editors. We recognize that we are in a pretty special place. There are benefits and risks.

Our privileged situation brings responsibilities and vulnerabilities. We are only as good as the blogs we post and the community that supports us. We recognize that we need to work actively to stay in touch with our community and nurture the relationships that infuse doctoral education. The kinds of activities that build community and reciprocity, such as constant networking through social media, communicating

through conferences, and being proactive in seeking out new voices, contributors, and ideas, all take time. And, because for most of our community, this blog work isn't formally recognized by our institutions as a workload activity, time is a significant inhibitor given the already accelerating pressures on us as academics. But operating outside the purview of an institution also brings benefits and protections: our community operates outside the political conflicts and tensions that characterize academia and inhibit so much real scholarship, debate, and thinking.

To return to our starting comment, we initially imagined the *DoctoralWritingSIG* community would consist largely of people who support doctoral students: supervisors, academics, and language developers. This community now includes doctoral writers alongside professors, librarians, and literacy advisers who write with and for us and construct a community that builds knowledge and shares practices around writing. The entry of doctoral writers into this community is likely to counter the isolation PhD students may otherwise experience. It would seem that these candidates are facilitating their own learning in informal forums that operate outside the traditional institutional hierarchies, embracing the values of open digital scholarship. The blog, as an online network, expedites the principles of sharing and collegiality.

In our experience, blogging has truly been inspirational. We have cemented otherwise fairly casual relationships with a host of other practitioners working across a wide range of institutions and countries and from quite different disciplinary and methodological orientations. Many are now valued colleagues in this new community of practice. It has been a stimulating journey. While we operate, successfully so far, outside the formal learning spaces of the academy, we are part of what appears to be the growing system of "shadow education," providing both academics and their doctoral candidates with what they aren't getting from formal arrangements. On one hand, this could be seen as a potential problem for the academy; on the other, some would argue that the valuable exchanges, knowledge construction, and shared practices occur largely because of the absence of institutional oversight, control, and interference.

Social media is still new and evolving. It is a place of fluidity where personal professional and institutional boundaries collapse; the locus of control is uncertain, perhaps unattainable. Institutions are envious that these platforms are the places where real debate and exchange so often occurs. We are lucky to be part of this; we hope that research students will also continue to connect with this community.

References

Aitchison, C., and C. Guerin. 2014. Writing groups, pedagogy, theory, practice: An introduction. In *Writing groups for doctoral education and beyond: Innovations in theory and practice*, ed. C. Aitchison and C. Guerin. London: Routledge.

Aitchison, C., and A. Lee. 2006. Research writing: Problems and pedagogies. *Teaching in Higher Education* 11 (3): 265–278.

Aitchison, C., and S. Mowbray. 2013. Doctoral women: Managing emotions, managing doctoral studies. *Teaching in Higher Education* 18 (8): 859–870. https://doi.org/10.1080/13562517.2013.827642.

Aitchison, C., and S. Mowbray. 2015. Doctoral writing markets: Exploring the grey zone. In *Handbook of academic integrity*, ed. T. Bretag. Singapore: Springer.

Aitchison, C., C. Guerin, and S. Carter. 2015. Academic blogging in the "accelerated academy": How to build a personal, professional and public community. The London School of Economics and Political Science, Social Sciences Impact Blog. http://blogs.lse.ac.uk/impactofsocialsciences/2015/06/25/academic-blogging-personal-professional-public/.

Badenhorst, C., and C. Guerin. 2016. *Research literacies and writing pedagogies for masters and doctoral writers*. Leiden: Brill.

Billot, J. 2010. The imagined and the real: The tensions for academic identity. *Higher Education Research and Development* 29 (6): 709–721.

Bouwma-Gearhart, J.L., and J.L. Bess. 2012. The transformative potential of blogs for research in higher education. *The Journal of Higher Education* 83 (2): 249–275.

Carrigan, M. 2015. Life in the accelerated academy. The London School of Economics and Political Science, Social Sciences Impact Blog. http://blogs.lse.ac.uk/impactofsocialsciences/2015/04/07/life-in-the-accelerated-academy-carrigan/.

Carrigan, M. 2016. *Social media for academics*. London: SAGE.

Carter, S. 2012. Original knowledge, gender and the word's mythology: Voicing the doctorate. *Arts and Humanities in Higher Education* 11 (4): 406–417.

Carter, S., and V.M. Kumar. 2016. 'Ignoring me is part of learning': Supervisory feedback on doctoral writing. *Innovations in Education and Teaching International*. https://doi.org/10.1080/14703297.2015.1123104.

Carter, S., and D. Laurs. 2018. *Developing research writing: A handbook for supervisors and advisors*. Abingdon: Routledge.

Carter, S., S. Sturm, and J.G. Geraldo. 2014. Situating e-learning: Accelerating precepts from the past. *International Journal of Pedagogies and Learning* 9 (1): 1–9.

Dowling, R., and M. Wilson. 2015. Digital doctorates? An exploratory study of PhD candidates' use of online tools. *Innovations in Education and Teaching International*. https://doi.org/10.1080/14703297.2015.1058720.

Downes, S. 2012. Connectivism and connective knowledge: Essays on meaning and learning networks. Stephen Downes Web. Available at http://www.downes.ca/files/Connective_Knowledge-19May2012.pdf.

Fourie-Malherbe, M., C. Aitchison, E. Bitzer, and R. Albertyn, eds. 2016. *Postgraduate supervision: Future foci for a knowledge society.* Stellenbosch: SUNMedia.

Garrison, R., and T. Anderson. 2003. *E-Learning in the 21st century: A framework for research and practice*. New York: Routledge.

Grant, B. 2010. Negotiating layered relations of supervision. In *The Routledge doctoral supervisor's companion: Supporting effective research in education and the social sciences*, ed. M. Walker and P. Thomson. Abingdon: Routledge.

Guerin, C., S. Carter, and C. Aitchison. 2015. Blogging as learning community: Lessons for academic development? *International Journal of Academic Development* 20 (3): 212–223.

Halavais, A. 2006. Scholarly blogging: Moving toward the visible college. In *Uses of blogs*, ed. A. Bruns and J. Jacobs. New York: Peter Lang.

Kamler, B., and P. Thomson. 2014. *Helping doctoral students to write: Pedagogies for supervision*. London: Routledge.

Katz, J. 2001. Here come the weblogs. In *We've got blog: How weblogs are changing our culture*, ed. J. Rodzvilla. Cambridge, MA: Perseus Books.

Lave, J., and E. Wenger. 1991. *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Lee, A., and C. Williams. 1999. Forged in fire: Narratives of trauma in postgraduate research education. *Southern Review* 32 (1): 6–26.

McCulloch, A. 2013. The quest for the PhD: A better metaphor for doctoral education. *International Journal for Researcher Development* 4 (1): 55–66.

Mewburn, I., and P. Thomson. 2013. Why do academics blog? An analysis of audiences, purposes and challenges. *Studies in Higher Education* 38 (8): 1105–1119.

Morrison-Saunders, A., S.A. Moore, M. Hughes, and D. Newsome. 2010. Coming to terms with research practice: Riding the emotional rollercoaster of doctoral research studies. In *The Routledge doctoral supervisor's companion: Supporting effective research in education and the social sciences*, ed. M. Walker and P. Thomson. Abingdon: Routledge.

Nerad, M., and B. Evans, eds. 2014. *Globalisation and its impacts on the quality of PhD education: Forces and forms in doctoral education worldwide*. Rotterdam: Sense.

Paré, A. 2011. Speaking of writing: Supervisory feedback and the dissertation. In *Doctoral education: Research-based strategies for doctoral students, supervisors and administrators*, ed. L. McAlpine and C. Amundsen. Dordrecht: Springer.

Pyhältö, K., J. Stubb, and K. Lonka. 2009. Developing scholarly communities as learning environments for doctoral students. *International Journal for Academic Development* 14 (3): 221–232.

Siemens, G., and K. Mattheos. 2010. Systemic changes in in higher education. *Education* 16 (1): 3–18.

Sim, K.N. 2015. PhD Study and computer technology use: A common experience? https://doctoralwriting.wordpress.com//?s=technologies&search=Go.

Veletsianos, G., and R. Kimmons. 2012. Networked participatory scholarship: Emergent techno-cultural pressures toward open and digital scholarship in online networks. *Computers & Education* 58 (2): 766–774.

Wenger, E. 1998. *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.

Williams, S. 2016. Why do university-managed blogs matter? On the importance of public, open and networked digital infrastructure. The London School of Economics and Political Science, Social Sciences Impact Blog. http://blogs.lse.ac.uk/impactofsocialsciences/2016/04/20/why-do-university-managed-blogs-matter/.

Doctoral Program Types and Legitimacy of Models: Different Forms for Different Purposes

10

Fernando F. Padró, Jonathan H. Green, and Robert Templeton

Contents

Abstract

Globally, there has been a shift in Higher Education. The rise in the number of nontraditional students and the educational inclusiveness obligations of universities has seen the development of differentiated doctoral pedagogies to meet the demand for flexible enrolments. The shift in university thinking that occurred due to student demand and political interference into higher education

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financially and socially has necessitated a change in traditional doctoral pedagogy to provide for the educational motivations of these students. This chapter will explore these factors relative to the doctoral degree models that have evolved in various countries in response to student, industrial, and political requirements.

Keywords
Doctorate by publication · Expertise · Higher doctorates · OECD · PhD · Professional doctorate · Rankings · Reputation

Introduction

A number of professions are requiring doctoral degrees to meet their needs of providing increased professional skills to meet professional practice standards and/or legitimacy of their professional skill set to the public, policymakers, and other professions (e.g., Blume 1986; Park 2007). Increasing globalization and policymaker interest regarding doctoral degrees and types offered (diversification) are trends that continue to gather momentum. One result of this trend is that "[a] mix of different program designs and structures seems to be common practice in most countries, reflecting the need to increase the number of doctoral candidates and the disciplinary differences to be taken into consideration" (Altbach et al. 2009, p. 148). A consequence of this trend is to heighten the need to ensure and assure that these degrees continue to represent the recognized highest level (or close to it) of educational attainment.

Doctoral degrees are an advanced research qualification reflecting study resulting in original research of publishable quality (Organisation for Economic Cooperation and Development 2015). Wildy et al. (2015) break down doctoral education into three aspects: the university as knowledge producer; the complexity and the challenge of generating new knowledge; and the self-direction of the doctoral candidate in navigating the framework of procedures and support offered by the university in which the candidate is enrolled. Therefore, the distinctive nature of these characteristics of doctoral education are crucial "in terms of, respectively, what to teach, how to teach, and which textual practices constitute appropriate and authorised forms of learning, study and research" (Green 2012, p. 11). Concerns revolve around issues of the quality of the final artifact – the legitimacy and originality of ideas, the research and writing at a publishable level, assessment and extent of competences promoted (Carter et al. 2010; Green 2012; McWilliam et al. 2002, 2005; Teichler 2008).

Most often, the literature on doctoral programs tend to focus on the following:

- Delivery mode
- Doctoral student experiences and completions
- Educative work, e.g., learning experiences and supervisory practices
- Full- versus part-time pursuit
- Recruitment and employability
- The impact of internationalization – and the sidebar concern of "brain drain"

One area that seems underserved in the literature is, from a policy perspective, determining what form(s) or model(s) of doctorate programs should be offered by universities. Lee and Boud (2009) indicate there are debates and studies in Australia, Europe, and the UK relating to issues of "scaling up," the nature and purposes of doctoral studies, and policy-led interest about the status of doctoral work alongside issues such as diversity and convergence.

This discussion benefits from balancing pedagogical concerns of the degree itself as a product and as a process, as suggested by Park (2005), with national and professional developmental needs – i.e., enhancing intellectual capital, realistic access and fiscal considerations, and demand (actual and potential). For example, in the USA, where there is a strong private university presence in the higher education sector, most doctorate degrees produced (72%) were from public universities (Ostriker et al. 2011). Overall, there were 283 doctoral-granting institutions per the Carnegie Classification index back in 2012; awarding 70% of PhDs that year (Sullivan et al. 2012). Overall, thirty-seven universities were responsible for 50% of PhD degrees, twelve of which were private universities (Ostriker et al. 2011).

Reputation (institutional, programmatic and of academic staff) is also a consideration when discussing , as it tends to impart legitimacy to the degree and the HEI based on the quality, recognition and attractiveness of the degree to employers and those seeking a higher decree. It should, however, be the by-product, rather than the ultimate driver of deciding which doctorate degrees are obtainable and how they are structured. This caveat is based on the reality that reputation is now linked to rankings as a means of decision-makers judging and/or demonstrating quality, with both positive and negative consequences to universities and programs (Adler et al. 2002; Marginson and van der Wende 2007). Methodologies used by the various ranking entities vary (media-based and professional organization-based), making precise rankings impossible, as there is no one standard set of criteria prevailing, driven by respondent perception, year-to-year variability, and statistical error inherent within estimations (Ostriker et al. 2011). What they do tend to have in common is the ordering of institutions and programs "according to the degree to which [institutions or programs] fulfill certain criteria" (Federkeil et al. 2012, p. 28). An example of criteria used by ranking organisations are those used by QS World University Rankings (2018): [1] academic reputation (40%), [2] employer reputation (10%), [3] faculty/student ratio (20%), [4] citations per faculty (20%), [5] international faculty ratio (5%) and [6] international student ratio (5%).

Consequently, as Boud and Lee (2009) pointed out, the changing conditions so far spelled out have spawned questions concerning the person earning the degree and the attributes for conditions of research and work. Simply, "[doctoral] education can no longer be taken for granted when it is becoming a signifier for a country's competitive success. . ." (p. 4).

Traditional doctoral programs require the writing of a thesis, dissertation, or equivalent (OECD 2015). According to the OECD, doctoral programs typically require coursework, although the amount of courses may vary and, overall should reflect the equivalent of about a minimum of 3 years of full-time work. Admission into doctoral programs is also normally predicated on the completion of certain master's degrees or

equivalent – e.g., as per definitions of OECD (2015) ISCED seven-level programs. However, changes in the workforce profile, job flows, expansion of professions, and professional positions, increased number of nontraditional learners requiring expanding access and learning opportunities (e.g., part-time pursuit of a degree) and limitations on academic positions due to retrenching of university funding are reasons driving the changes in how doctoral degree programs are structured. Access and affordability are important concerns, as is quality (cf. UNESCO, 2010). Regardless of the form of the doctoral degree and supporting programmatic elements available through universities, the key features as stated in the UK's Quality Assurance Agency for Higher Education (QAA 2015) *Characteristic Statement: Doctoral Degree* are, regardless of format, based on the doctoral degree providing the following:

- "[A] high-quality and vibrant research environment" (p. 11);
- Appropriate supervision;
- "[A]ccess to resources and development opportunities;
- Opportunities for peer interaction and support;
- Demanding but fair academic standards; and
- The need for the candidate to take responsibility for his/her own learning and research output" (p. 11)

Achieving a doctoral degree – by historical and current perspectives – is a process of developing expertise. Situating Bransford et al.'s (2000) comments on how experts differ from novices into this context, becoming an expert means the individual pursuing this advanced degree is able to:

- Notice features and meaningful patterns of information not noticed by others
- Acquire major amounts of content knowledge organized in a manner reflecting a deep understanding of the subject matter
- Develop a knowledge base that cannot be reduced to sets of isolated facts or proposition, instead the individual's knowledge base reflects context of applicability and
- Be flexible in retrieving important aspects of the individual's knowledge base with little intentional effort

Quality points as suggested by the QAA above were created to ensure that the processes within programs of getting individuals to that level of expertise are as appropriate to ensure success as much as possible, regardless of doctoral degree type. Upon completion of a doctoral degree, the result is more than the sum of its parts. The important point to make is that doctoral programs, regardless of type, are valued by their stakeholders for different reasons (Ostriker et al. 2011). Ideally, a doctoral-level education provides "the acquisition of complex integrated systems of representations for the execution, monitoring, planning, and analyses of performance" (Ericsson 2008) that is valued by end-users and stakeholders in general – here we are thinking of policymakers. For example, the development of research-based doctoral programs has increased cooperation between industry, independent research associations, and governments (Altbach et al. 2009).

Nevertheless, there is a level of uncertainty and tensions associated with the creative and intellectual endeavor of doctoral research in traditional PhD and professional doctorate and other doctoral type programs (Malfroy 2005). This concern is a variant of the harmonizing of the effectiveness and efficiency paradoxes which successful universities balance through their specialization in program offerings (Biloslavo et al. 2013; Glass et al. 2009). PhDs are still seen as the more prestigious degree. Alternatives to the PhD have proliferated in Australia, Canada, the UK, and the USA to meet many of the demands placed by stakeholders as indicated above, especially as a bridge bringing together academic practice with professional practice (Gill and Hoppe 2009; Huisman and Naidoo 2006). Ultimately, the issue becomes one of – again – reputation, this time of the degree itself along with stakeholder considerations and preference (employers, sector, and students) when it comes to the university deciding which type of doctoral degree to offer prospective students.

For the remainder of this chapter, the narrative focuses on the different types of doctoral degrees as defined by the QAA (2015): subject specialist doctorates – the traditional PhD and its variants; professional doctorates; doctorate by publication and its variants; and "higher" doctorates. These categories are framed by how the doctorate is defined. Doctoral degrees are presumed to be terminal degrees (although in some countries and instances there are higher recognitions) rather than entry first-professional degrees, which is why the medical degree (MD) and the juris doctor (JD) in law awarded in the USA do not technically meet this definition as can be noted by their equivalent in other national degree offering schemes. Professional doctorates – in some instances, the MD and JD can be defined under this category (e.g., Gill and Hoppe 2009; Powell and Long 2005) – are also terminal, knowledge-advancing degrees whose focus is more applied in nature. The difference between the two is that the traditional PhD is more disciplinary focused and geared toward preparing new academics, whereas the professional doctorates are more practice oriented. The less-seldom discussed "higher" doctorates are those provided to provide recognition to senior scholars or, as established in Germany in the nineteenth century, as a second advanced research qualification.

The Traditional PhD

What is often referred as the Doctor of Philosophy (PhD) degree was a nineteenth century creation resulting from the changes to the German higher education system first introduced by Wilhelm von Humboldt and modified to meet utilitarian requirements of state bureaucrats (Morgan 2011). It was adopted and linked to the existing undergraduate framework in place in the USA toward the end of the nineteenth century. This period coincided with the explosion of knowledge as represented by the expansion and maturation of disciplines offered within universities beyond the traditional trivium and quadrivium (the basis of the liberal arts) from Medieval and earlier times, and the rise of empiricism and rationalism. In both Germany and the USA, the PhD became a symbol of the developing research university. A variant of the PhD is one offered in the UK and other countries based on the UK university model. This PhD (or DPhil) has been offered from the early twentieth century (Park

2005). While other countries, such as France and the Scandinavian countries, have had a long tradition of doctoral level degrees, the prevailing models at present primarily are based on the USA's doctoral degree model or the UK's. One driving reason for the "standardization" of doctoral degrees has been the Bologna Process. Its Bergen Declaration (2005) and Salzburg Bologna Seminar Report (2005) provide the underlying rationale for the desire to "standardize" third cycle doctoral degree structures: meeting the needs of the employment market.

The characteristics of a PhD degree, overall, remain the same as described by Hesseling back in 1986. Thus, process for a PhD still centers on engaging in a research artifact under the supervision of academic staff well versed in the subject matter. The artifact, usually referred to as a dissertation or thesis, is reviewed either by a committee of supervising academic staff or by external examiners. Where variation occurs is in the admissions processes (selectivity; prior degrees in the field or unrelated, usually at the advanced ISCED 7 level or Honours Bachelor degree (OECD 2015), the extent of coursework undertaken by the doctoral student and the levels/number of examinations undertaken prior to commencing the dissertation or thesis. For example, in the USA, it is not atypical for students to undertake about 2 years of full-time coursework or equivalent plus examinations prior to undertaking the dissertation. UK model-based programs require little coursework, except for the "new route" PhD or taught doctorate model (Gill and Hoppe 2009; Huisman and Naidoo 2006; QAA 2015). The requirements are fulfilled solely or mostly by research. The learning and knowledge creation is in/through the research process itself. The German model typically does not require coursework, but students are allowed to attend courses they feel are relevant to their respective topics. At this point, for self-disclosure purposes, it is worth noting that the authors have pursued different doctoral program experiences. One of the authors underwent a traditional PhD experience with multi-year coursework. A second author experienced the traditional UK model PhD primarily based on a research-based dissertation while the third author went through the process of a professional doctorate degree.

Overall, the PhD experience, as with most of the other doctoral programs, comprises about 3 years of full-time study in most countries, although the reality is that doctoral students typically take longer to complete their degree (OECD 2015). Program duration was a concern raised as part of the Bologna Process, although strict regulation of length was not deemed the right solution (Christensen 2005). It can be argued that the outcome of a focused contribution to disciplinary knowledge is more important than a significant amount of coursework because the tailoring of the learning experience is based on the pursuit of supervised research. In this respect, the PhD represents the worth given to specialization by recognizing (or attributing) the benefit to the rigor of the process and its applicability and/or cumulative contribution of the "new" knowledge. The implicit counterpoint is that depth is more critical than breadth as it relates to establish a proper level of knowledge and competence. Taking such a view also demonstrates how this level of knowledge in many of the disciplines, particularly in the natural sciences, ceased to be easily accessible to the lay public and required specialized skills (cf. Kuhn 1970).

There has been criticism of the PhD from the 1990s onward while, during this time, there also has been an increase in the number of PhD awards. Some of the

intended and unintended consequences have been around – and presented – since at least the time of William James, who in his *The PhD Octopus* (James 1903) noted some of the early issues, many of which are still relevant:

- What happens when the idea is good but execution of the research and/or writing is poor
- Quality of the reviewers (committee members or examiners) – and, implicitly, of the supervision process and supervisors
- Conflation of process and knowledge/tyranny of process
- The need for the title itself to provide quality assurance and stimulate scholarship
- Intellectual snobbery and the check of ingenuity
- Career paths when the degree is a requirement to qualify for a position

For a current litany of issues surrounding the PhD, Nyquist and Woodford's (2000, p. 6) report identified many of the concerns that still resonate today:

- Shortening time to degree for the PhD; determining its "essence"
- Developing more diversity among the recipients of PhDs
- Increasing doctoral students' exposure to technology
- Preparing doctoral students for a wider variety of professional options [beyond academic positions]
- Incorporating an understanding of the global economy and environment [this last now beginning to include sustainability]
- Making interdisciplinary/transdisciplinary work a more integral part of doctoral education [in spite of the paradox it represents to the desire for in-depth specialization and the need to promote the development of transferable skills (Christensen 2005; Costley and Baker 2012; Holley 2010)]

Nerad (2004, p. 17) summarized additional criticisms of the PhD from three studies in the USA conducted around the turn of the twenty-first century that adds more detail to some of the above bullet points. These concerns are still reflected in the current literature and policy steering mechanisms:

- Doctoral students are too narrowly educated and trained
- Doctoral students lack key professional skills (e.g., the ability to collaborate effectively and work in teams, no organizational or managerial skills)
- Doctoral students are ill prepared to teach
- Doctoral students take too long to complete their degrees, in some fields a high number do not complete their degrees, and accumulate significant debt
- Doctoral students are ill informed about employment outside academia and have too-long a transition period from PhD completion to stable employment [and thus the need to promote increased mobility (Christensen 2005)]

Although not a direct criticism, a survey of research-doctorate students in the USA indicated a decline in (1) the number indicating they had "research and

development" as a career objective in all disciplinary fields represented in the survey and (2) a decline in the number of respondents interested in teaching in all fields represented except neuroscience (Ostriker et al. 2011). This suggests a potential demand shift towards other models of advanced education. This combines with policy, workforce, and career path considerations, different research contexts regarding approach and collaboration, and concerns of meaningless and cumbersome formalism to challenge the appropriateness of the PhD and giving rise to new doctoral models such as the PhD by publication and professional doctorates (Gannon 2006; Park 2005). Poor success rates (high attrition and low completion) and relevancy have brought a rethinking of the PhD as well, especially its apprentice model further driving the creation and provision of different degree models.

Professional Doctorates

Doctoral education deals with a cultural belief system that shapes professional lives as well as the production of degree holders (Nyquist and Woodford 2000). Considering and providing doctoral degree alternatives reflects these two points as these concern value (prestige and reputation) and its assurance to holders, seekers, institution, disciplines/professions, workforce flows (job and worker). Considering and providing doctoral degree alternatives reflects these two points as these concern value (prestige and reputation) and its assurance to holders, seekers, institution, disciplines/professions, workforce flows (job and worker) and the degree of connectivity to disciplinary and professional contexts in terms of knowledge creation and contribution to practice. Job flows are the measure of gross creation and destruction of jobs as a reflection of the expansion and contraction of businesses/industries (Davis and Haltiwanger 1999) while worker flows are all movements of workers into and out of jobs (Burgess et al. 2000).

Proliferation of so-called professional doctorates is a long-standing occurrence in the USA and, to a lesser extent, Canada. To illustrate, in both countries, the Doctor of Education (EdD) degree has been offered throughout the twentieth century. Another practitioner-scholar doctorate degree the PsyD in Psychology has been available in the USA since the 1950s (Norcross and Castle 2002). These and the other professional doctorate degrees were "conceived as a *pre-service* award rather than an *in-service* award for advanced professional development" (Bourner et al. 2001, p. 66). These degrees denote the more professional nature of the educational experience, linkage to licensure requirements, and, possibly at least for the EdD, the recognition that people already in mid-career are pursuing the degree for professional advancement. Australia, Ireland, and the UK have experienced the proliferation of professional doctorate programs; however, European and other countries are relatively recent to offering these types of degrees. Key reasons for the provision of these programs have been an interest at the policy level to have a diversity of doctoral programs, the increase in opportunities for doctoral level research in nontraditional disciplines and professions, reducing the amount of time needed to achieve the degree (fast-tracking), and using different delivery approaches (Christensen 2005; Gill and Hoppe 2009; Neumann

2005). A distinction between the USA's approach and those by other countries reflects Australia's view conceptualization of the professional doctorate as "an in-service or professional development award, concerned with production of knowledge in the professions" (Maxwell and Shanahan 1997, p. 133) rather than as a preservice award focusing on contributions to practice.

UK's QAA (2015) distinguishes between two types of professional doctorates: professional- and practice-based. Both provide an alternative to the traditional PhD degree (Powell and Long 2005, p. 9). There is no formal standard definition for these programs (Kot and Hendel 2012), which is exemplified by the challenge in classifying MD and JD degrees as mentioned earlier in the chapter. To illustrate the challenge of unclear definitions, a According to the USA's National Center for Educational Statistics Integrated Postsecondary Education Data System [IPEDS], the MD and JD degrees fall under the category of doctor's degree – professional practice (https://surveys.nces.ed.gov/ipeds/VisGlossaryPopup.aspx?idlink=942) because they are considered first- professional degrees as noted above (cf. https://www2.ed.gov/about/offices/list/ous/international/usnei/us/professional.doc). One reason may be the lack of common understanding of what reasonable criteria for the award might be due to differences within professions regarding the balance between "taught" and "research" components along with how assessment should be pursued (Powell and Long 2005). Another reason may be what seems to be how "practice-based" seems to be used as a descriptor for professional doctorate (e.g., Crosier et al. 2007). A third reason is that the evolution of the professional doctoral has been influenced by various governments as a solution to the lack of suitably trained and qualified people to manage the demand for these degrees to fill the widening gap between the number of enrolments and research supervisors. Examples of this possibility can be seen in reports by, among others, Christensen (2005), the EUA (2007), Mellros-Bourne et al. (2016), and Powell and Long (2005); however, these "official" views do reflect much of the academic community's view on these types of degrees (Lester 2004). One effect emanating from this lack of definition outside the discussion below is the implications for quality assurance of the doctoral programs (Mellros-Bourne et al. 2016).

While the distinction between professional and practice-based doctoral programs may be limited in terms of jurisdiction, it is worth noting because of how this differentiation emphasizes the challenges to degree appropriateness for individuals in the performing arts (Candlin 2000; Hoddell et al. 2002). The temptation is to compartmentalize practice-based doctoral degrees to the realm of Doctor of Arts (cf. Nimkulrat 2011). However, Edwards (2009) and Gill and Hoppe (2009) made the case that these programs can also apply to accounting, education, engineering, law, medicine, and nursing, among others. The UK Council for Graduate Education (UKCGE) identified these two competing assumptions in its 1997 *Practice-based doctorates in the creative and performing arts and design*, but in so doing created the seeds for some of the lack of clarity currently noted in the literature regarding professional doctorates. As Candlin (2000) noted in her argument against the UKCGE's conception of theory and practice, their attempt to propose a broad continuum classification instead of differentiating between conventional and practice-based doctorates reinforces the challenges identified by Powell and Long (2005) regarding what is taught, what and how research should be

pursued. and how should the student be judged. Consequently, because of all of the variability of these degrees in actual practice, it is understandable that these types of degrees may not provide the ultimate solution (Huisman and Naidoo 2006). An example of the confusion that following some of the literature as a lack of the clear distinction between professional doctorates and PhDs can be noted in the discussion of practice-based PhDs as presented by Winter et al. (2000). The lack of a clear-cut distinction – as they pointed out – makes it difficult at times to determine if the discussion is about making changes to the PhD itself or whether it is about distinct professional doctorate programs or even creating a new variant. Later on in this chapter, the practice-based doctorate is discussed in the doctorate by publication and its variants section. This treatment is consistent with how it was treated by Huisman and Naidoo (2006).

Definition of Professional Doctorates

The QAA (2015) acknowledges that there is considerable variation in nomenclature, but what it is doing is describing a de facto distinction between these degree types and the PhD (Hoddell et al. 2002). Given the vagaries surrounding the distinction between professional doctorates and practice-based programs based on the above line of reasoning, it is most sensible to pursue defining what a professional doctorate is from the broadest perspective.

A beginning point for defining professional doctorates or practice related doctorates is provided by the European Universities Association (2007):

> Programmes known as "Professional doctorates", or practice related doctorates, are doctorates that focus on embedding research in a reflective manner into another professional practice. They must meet the same core standards as "traditional" doctorates in order to ensure the same high level of quality. It may be appropriate to consider using different titles to distinguish between this type of professional doctorates and PhDs. (p. 14)

A more focused but still broad definition is found in the Ministerial Statement on Quality Assurance of Degree Education in Canada (2007). According to the document, "[practice-oriented] doctoral programs are of a more applied nature, relate to a professional or creative activity and, where there is an internship or exhibition requirement, may also require a dissertation" (p. 3). Kot and Hendel (2012) suggested adopting the Council of Australian Deans and Directors of Graduate Studies' (2007) definition of professional doctorate because it reflects the broadness and incomplete consensus regarding the degree. Its addition to the Canadian definition provides more nuance to the taxonomic elements behind the notion of professional doctorate as the Australian perspective looks at this type of degree as:

> . . . a program of research and advanced study which enables the candidate to make a significant contribution to knowledge and practice in their professional context. In so doing, the candidate may also contribute more generally to scholarship within a discipline or field of study. (p. 1/3)

The UKCGE provides a slightly different definition, but one similar in perspective that also provides additional detail when defining the idea of professional doctorate:

> . . . [a degree] where the field of study is a professional discipline and where students are supervised within professional contexts and/or within the university but in relation to that context. (Powell and Long 2005, p. 7)

Characteristics of Professional Doctorates

Key characteristics of professional doctorates are, per the UK's CRAC Report to the UK's Higher Education Funding Council for England (HEFCE) reflect much of what has been so far discussed (Mellros-Bourne et al. 2016, p. 12):

- Being practice-based rather than institutionally focused
- Undertaken by people in work, generally with significant professional experience and expertise
- Situated within the individual doctoral student's work context
- Producing an original contribution to practice and practical knowledge which leads to professional or organizational change
- Principally concerned with the production of knowledge from practice so that it may be applied back to practice

Outside the USA, professional doctorates are more highly structures than most PhD programs (Mellros-Bourne et al. 2016). The dominant distinguishing pedagogical feature of the professional doctorate is the requirement to undertake a taught coursework component. This coursework involves developing and understanding of the research methodologies and research techniques necessary to complete a research project within a particular industry discipline such as education, engineering, law, or business administration (Kot and Hendel 2012; Neumann 2005).

Coursework and program length seem to be treated as a trade-off to ensure quality learning. The trade-off, nonetheless, is predicated on a highly structured process. Coursework is provided as a buttress to enhance the doctoral student's capacity to prepare the research component of the program. A related and critical issue driving policy concerns and individual choice is that of cost. As the burden of funding the educational experience falls in greater proportion to the individual and external (scholarship) opportunities become scarcer, the value for money concept becomes more relevant (cf. Park 2005). These programs justify the cost factor by emphasizing personal benefits over potential accumulated debt while reducing the potential overall costs through providing what should be a reduced timeline from commencement to completion (cf. OECD 2015).

It is not unusual to see the intake in the form of cohorts attending structured courses together (Bourner et al. 2001; Mellros-Bourne et al. 2016). For example, the chapter's lead author was part of and led a cohort-, weekend-based professional degree program in the USA prior to his move to Australia. Within Australia, Europe, Canada, and England, these research courses are usually completed at the undergraduate Honors or Master's degree as a requirement of commencing a doctoral qualification. The mode of entry to the professional doctorate is specialized with essential criteria being a professional qualification and professional experience (Neumann 2005).

One perceived difference with the traditional PhD is a greater emphasis on the development of the student (McWilliam et al. 2002; Stephenson et al. 2006). This taps into the motivation of students seeking this type of degree:

- Those directly linking their doctorate with career development and accelerated promotion (extrinsic professional initiation)
- A reasonably experienced and established professional wanting to further develop his or her professional career based on their existing work or wanting new opportunities for diversifying career options (extrinsic professional continuation)
- Those seeking intellectual stimulus and personal fulfillment (intrinsic-personal/professional affirmation (Scott et al. 2004)

Downside of Professional Doctorates

Gill and Hoppe (2009, p. 47) pointed out potential drawbacks to the professional doctorate, especially when compared when the traditional expectations of academic journal publications and the capacity to perform "pure" or "basic" research are part of the prestige (reputation) equation:

- Lack of tie-in between problems being investigated and gaps in the research literature
- Project rather than publication emphasis, requiring the narrow disciplinary focus of an academic dissertation be broadened to encompass real world realities
- Likelihood of part-time or otherwise employed students who cannot help assume teaching duties or assist in faculty member research projects and grant-writing
- Reduced ability to enforce direction on students who are paying their own way and who are likely to be senior professionals in their own right
- Unwillingness of students who intend to remain in industry to socialize to the academic culture

There are also instances of professional doctorate candidates deciding to and transfer over to PhD programs. "Some of these transfers had been encouraged by the supervisor, on the basis that the selected research project had evolved away from a focus on reflective practice and in an academic direction" (Mellros-Bourne et al. 2016, p. 49). Although the reverse has been noted (Neumann 2005), the matter of fitness, of "feeling right" tends to prefer the movement toward the PhD. All told, these points combine to generate negative perceptions that the professional doctorate is a lower status alternative to PhDs that do not have the rigor or standard of the PhD (Neumann 2005). In some instances, such as the Engineering Doctorate (EngD) in the UK, the characteristics do not fit those identified to be and are therefore another variant of doctorate that is described below (Mellros-Bourne et al. 2016).

The Doctorate by Publication and Its Variants

While the traditional path to qualify with a doctorate is through the examination of a substantial, monographic dissertation, or thesis (the nomenclature can vary from country to country and from institution to institution), a number of alternative

pathways have emerged relatively recently. Chief among these is the *doctorate by publication*, but many university prospectuses will also reveal broader portfolio and practice-led approaches, particularly in the professional- and performance-based fields. There are hybrid subcategories that apply to certain fields, too: in literature or creative writing, for example, some faculties will accept, as a combination of a publication- and practice-led approach, a novel or a collection of short stories as the basis for fulfilment of the degree requirements.

There are often individual circumstantial and pragmatic reasons for pursuing these alternative pathways. For instance, an in-service academic may be under institutional pressure to publish articles while, at the same time, pursuing a doctorate; following the dissertation by publication route allows for both of these pursuits without duplication in either workload or dissemination. A hospital administrator may have a significant workplace challenge that in itself would constitute an equivalent load to a research study; by investigating the problem in situ and producing artifacts that relate to that issue, the administrator may, by compiling a portfolio, contribute both towards solving the problem and gaining the doctoral credential.

These alternative doctoral pathways have developed partly also in response to factors that Duke and Beck (1999) identified in the US context. They pointed out that while the traditional 200–400 page dissertation – being its own genre and often targeting a narrow disciplinary readership (or "audience") – can be seen as a rite of passage in academia, particularly if one aspires to an academic career, the same strictures of audience and genre do not apply necessarily to a publication- or portfolio-based dissertation. While, as Duke and Beck observe, a traditional dissertation is written for the sole purpose of gaining a doctorate, the publication or portfolio approach enables the candidate to take into consideration a wider audience – or multiple audiences – and attain broader dissemination through a series of interrelated works. Conversely, nonacademic practitioners, such as engineers, also may direct their writing towards their respective fields.

In addition to considerations of genre and discourse, a postcolonial world has introduced imperatives for accommodating nontraditional students; as Taylor and Beasley (2005) argued, traditional PhD candidates "are disproportionately male, from high-status social-economic backgrounds, members of majority ethnic and/or racial groups, and without disability" (p. 141). Hence, in addition to transcending text-generating and disseminating limitations, a recognition of alternative doctoral pathways allows not only for more flexibility in nontraditional disciplines and domains in which the traditional research paradigm is not dominant (see, for example, Engels-Shwarzpaul 2013), but also for widening and diversifying participation by allowing for different ways of knowing and different ways of presenting knowledge.

Doctorate by Publication

Perhaps the best-known of the alternatives to the traditional monographic doctoral dissertation, the doctorate by publication allows the candidate to submit instead a series of interrelated articles for examination.

Depending on the policy of the respective institution, these articles should either already be published in a reputable peer-reviewed journal or be accepted for publication in such a journal. Conference papers and chapters in edited books may also be accepted as part of the dissertation.

In the UK, according to some sources (e.g., Thomson 2013), the doctorate by publication emerged as an alternative to the traditional dissertation as a way of according credentials to faculty members who had eminent publication histories but no doctorate, or those who had come from professional backgrounds. Although the traditional monograph prevails in the UK, the thesis by publication route has become increasingly available to those who have not come from such backgrounds.

In other countries, such as Norway and Sweden (where it is referred to as a "compilation thesis") such a dissertation has become the standard form in some fields (Dellgran and Höjer 2012), and while the form has been more prevalent globally in the "hard" sciences, it is slowly gaining traction in social sciences and humanities (Dellgran and Höjer 2012; Guerin 2015). Most Australian universities now offer the publication pathway for the PhD.

In Australia, but also in other countries, the requisites for the dissertation by publication are still somewhat more fluid than those for the traditional monograph. This leads to uncertainty for students who wish to take this path, particularly in the humanities and social sciences, where it is still relatively untrodden. There tend to be few guidelines, for example, as to the number of articles (or other works) doctoral candidate needs to submit; while many PhD programs in the UK require between five and seven ("Looks good" 2011), others elsewhere are unwilling to define the requisite number, leaving this to the discretion of disciplines and faculties. The "Guidelines for a thesis including published works" published by Monash University in Australia (2017), for instance, states that "[t]here is no defined number of publications". . .and that consideration in this regard "remains a matter of professional judgement for the supervisors and candidates."

The uncertainty and subjectivity of a qualitative judgment extends to the type of papers presented. A student potentially may have the misconception that submitting a certain number of articles published in journals displaying certain metrics may assure a pass in the doctoral examination. This is usually not the case, however. The dissertation by publication will be evaluated in accordance with the same criteria as those that apply to the traditional monograph; often these include considerations of originality, critical insight, and potential contribution to knowledge on the part of the examiner or dissertation committee. Theoretically, an examiner will have little or no regard to the reviews or editorial decisions of the publications themselves, although, of course, in reality an examiner would be likely to be influenced by papers published in highly ranked journals (Sharmini et al. 2015).

While there may be a perception by some that the doctorate by publication, because it is nontraditional, is somewhat substandard, institutional policies frequently dictate that it is evaluated by the same standards of rigor to which a traditional monographic dissertation is subjected. Additionally, while the publication pathway may be suitable to certain candidates, there remains a certain amount of uncertainty as to "norms" of presentation and format which should be a factor to doctoral students in considering this pathway.

Doctorate by Portfolio

Although the doctorate by portfolio is in many cases synonymous with the doctorate by publication in that the latter includes, by implication, a portfolio of articles published or accepted for publication, some institutions and programs will accept as at least partial fulfilment of the doctoral degree a broader collection of artefacts. For example, following a trend identified by Altbach et al. (2009), the College of Information and Computer Sciences (2018) at the University of Massachusetts, Amherst stipulates that, for the "PhD Portfolio," "it may be helpful to include other items [in addition to certain core requirements] that support you as a candidate for a PhD." Examples include "Accomplishments, Honors and awards, Refereed publications, Unrefereed publications, Unpublished documents, Presentations, Proposals, Professional reviewing, Teaching, University and department service, Lab service, Professional society memberships, Volunteer activities, Plans, Needs, [and] Self-assessment."

In the portfolio, key to the attainment of the doctoral award, as is the case with the more limited doctorate by publication, is the demonstration of research competence, rigor, and scope to a level equivalent to that of the traditional monographic doctoral dissertation.

Doctorate by Practice

The practice-led (or -based; some programs distinguish between the two) option to fulfilling the requirements of a doctoral degree is somewhat similar to the portfolio approach, although it will frequently be more explicitly targeted towards currently engaged professionals or performers – commonly in fields such as the performance and fine arts, design, and media. However, it may be applicable to any professional context, and has had increasingly become relevant to practitioners such as nurses, teachers, police, and physicians who wish to use the aegis of the doctorate to inquire into an aspect of their own professional practice (Winter et al. 2000), often for the potential benefit of their respective practices or organizations. Particularly in the USA, there are now some well-established practice-led doctorates in these fields (Chase and Pruitt 2006). There are some commonalities here with the more traditional professional doctorate discussed above; however, what may distinguish these pathways is that a monographic research dissertation is not expected towards partial fulfilment of the degree.

Before embarking on such a program, potential candidates usually will have to establish their professional bona fides (through a verifiable resume or other professionally-relevant documentation (e.g., Manchester Metropolitan University 2013).

In cases where a doctorate is sought on the basis of creative work, originality is the key criterion. Originality may be demonstrated through works such as exhibitions, plays, and other performances, such as films, musical compositions, or novels. In many, if not most, cases, such demonstration of originality is accompanied by

analytical text (called *exegesis* in some contexts, particularly the Australian) which provides an interpretive and critical overview of the creative works. It is by this means that the candidate demonstrates the additional academic criteria derived from the traditional dissertation: critical insight and contribution to knowledge (Winter et al. 2000).

Another example of a doctorate by practice is the Engineering Doctorate (EngD). As Mellros-Bourne et al. (2016) explained:

> The delivery model for EngD is essentially that of a doctorate based physically in an industrial partner and results in a PhD award. Increasingly the sector recognises that the EngD is a part of industrial doctoral training provision. . . (p. 14)

Emergent Pathways

The alternative models that have been reviewed here have become established in various doctoral programs globally, and there is little doubt that they allow for more pragmatic choices by both candidates and institutions, particularly in regard to the professional orientation of the students. These models continue to derive their legitimacy from the "gold standard" of the traditional monographic doctoral dissertation. However, there are many emergent options which yet have to be explored in terms of a diversifying and widening cultural and socioeconomic context; these may entail a broadening, pluralistic approach that allows for alternative methods of derivation.

In postgraduate research programs, and particularly in the PhD, as Engels-Shwarzpaul (2013) argues, "pedagogy and research intersect intensely and in highly personal ways, but non-traditional candidates' interests, circumstances and needs do not sufficiently enter into a consideration of this distinctive pedagogical configuration" (p. 2). It is thus worth exploring new (to traditional academe) and divergent "epistemic potentialities" – but not only in the interest of candidates from diverse backgrounds, but also in the interests of knowledge advancement in general.

The question as to whether such recognition of diverse ways of knowing and representing knowledge will be accommodated within existing program structures – either the traditional monographic doctoral dissertation or the established alternatives discussed here – or new emergent models will be one of intense interest in this space, and may represent the next "big shift" in Higher Education.

Higher Doctorates

Higher doctorates were introduced in the UK in the 1870s (Park 2005). These "second-level" doctorates are the degrees of the Doctor of Science (DSc or ScD) and the Doctor of Letters (DLitt). Considered at a higher level than other doctorates, "[they] are normally awarded by research degree-awarding bodies to staff who have earned a high reputation for research in their field through their professional practice,

which may or may not have been gained in an academic institution" (QAA 2015, p. 10). It is possible to achieve one of these degrees by publication as the criteria are based on a body of work presented. "Honorary" degrees also fall in this category in recognition of "an individual's contribution to a particular field of knowledge" (p. 10). Honorary degrees are treated similarly in numerous national degree schema (Park 2007). While university procedures distinguish between the approaches taken toward higher degree, there seems to be low strategic priority toward these awards as they provide universities with little benefit outside the possibility of enhancing university standing or the individual esteem and promotion prospects of an academic so honored (Barnes 2013).

Higher doctorate degrees in the UK have some equivalence with the Habilitation postdoctoral award (Barnes 2013). Habilitation is a second, postdoctoral award that allows recipients the ability to teach in their fields at the university level in Germany, Austria, and Switzerland (Weineck et al. 2015). A process taking up to 4 years, Habilitation traditionally includes the production of a habilitation thesis accompanied by an examination process and public lecture (Federal Ministry of Education and Research n.d.; Freie Universität Berlin n.d.). As per Germany's Federal Ministry of Education and Research (n.d.), Habilitation can be achieved "through the publication of several peer-reviewed essays in prestigious specialist journals." Other countries in Europe still have similar second level doctorates that have survived the Bologna Process, but these maintain some similarity with the German approach as exemplified by the Habilitation Procedure of the Semmelweis University in Hungary (https://www.asklepios.com/dam/jcr:4da47388.../habilitation_regulation_english.pdf). Yet, at the end of the day, these are all treated as belonging to the same level: ISCED 8 (OECD 2015).

Concluding Thoughts

Christensen and Eyring (2011) illustrated how "lesser" universities emulated the more prestigious ones in their attempt to increase exposure and bottom line. This benchmarking, whether formal or informal, has been around for a long time in higher education, ironically all the more so since the rise of the quality movement in education and its adoption by governments as part of their administrative and regulatory procedures (e.g., Bridgland and Goodacre 2005; Jackson 2001; Northcott and Llewellyn 2005). Nevertheless, Christensen and Eyring (2011) see the emulation that goes on in the higher education sector as a negative strategic approach rather than a positive one.

A review of the literature and policy regarding how the doctoral degree is evaluated and used throughout the international higher education arena demonstrates the role that corporatization and credentialism play in the growth of professional doctorates (Servage 2009). It is easy to argue that the creation of new doctoral degree types and modification of the traditional PhD model is part of the disruption Christensen and Eyring (2011) consider salubrious; however, is it? According to Nyquist and Woodford (2000), "Doctoral education and its subsequent societal

enrichment depend upon intricate partnerships" (p. 4). What has been noted in this chapter is that the proliferation of doctoral degree types seems to be linked to the general "credential inflation" (or "credential creep") that came about during the last third of the twentieth century and seems to continue to this day (Smith 2018). As Brown (2001) and Lowe (2000) noted, this credentialism is also linked with increased access to higher education itself that on its own is also increased by globalization. The result is that there now is in place a credential-producing economy that actually is a self-driven prestige economy. (Collins 2002). The issue for universities and policymakers is how the technological advances will disrupt the traditional and still current thinking pertaining advanced degrees. Right now, to illustrate, the European Qualifications Framework (EQF) level 8 degrees – the doctoral degrees – need to:

> Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research. (https://ec.europa.eu/ploteus/content/descriptors-page)

However, are the trends of microcredentials and badging going to disrupt the ability of individuals to meet EQF level 8 or ISCED level 8 criteria through a different degree process? Meritosis' (2016) comments bring the impetus of this question to bear: "As a more diverse credentials landscape has evolved, the push to create a more connected and navigable system has gained steam, opening the way for technological forces to prevail" (p. 28).

This chapter has attempted to present a broad brushstroke approach to the challenges and responses to the provision of doctoral education programs by higher education institutions, primarily universities. The doctoral degree itself has a long and significant history, but that has not been a focus of the narrative. Also purposefully not discussed are online doctoral degree offerings. While other works in the literature, such as Gill and Hoppe (2009), differentiate online doctorates from other types that are discussed here, the authors of this chapter are of the opinion that online doctorates as a type are already captured in the chapter's discussion. The outstanding issues relating to online doctorates are delivery-based and pedagogical in nature, which are too specific in scope and thus detract from the main thrust of talking about degree types.

Issues surrounding doctoral education are many and varied, and support for the maintenance of the traditional PhD and/or the different types of doctoral degrees is not universal. These issues seem to be straightforward, but they are not. The reason is based on who is controlling and doing the discussion. There is an unstated desire to control credentials, their use and value. Involvement in the discussion and ensuing debates take the form of Clark's (1983) triangle of coordination, which identifies the players being the market (users an end-user external stakeholders), government and the academic oligarchs. Debates are influenced by the different narratives based on the dichotomous views – at least how these play out in the public arena – of public benefit and neoliberalism's *homo economicus* (cf. Bozeman 2002; Hamann 2009;

Padró 2004). The increased influence of neoliberalism has changed social expectations of the community in general as well as students in terms of the value of the credential and who ultimately benefits (Padró & Green, in press).

There is no one recommendation resulting from this chapter. The authors did not intend this. In any case, HEI degrees are context specific due to internal institutional concerns such as staffing and other resourcing, costs of delivery, local and national socioeconomic concerns, workforce, and workforce development issues. Other concerns such as reputation, institutional size and mission also shape institutional responses. So too do social values and imperatives, such as those relating to widening and diversifying participation. Technological trends, moreover, play a role in HEI strategic planning and curricular offerings. Need varies according to these concerns. While government policymakers and regulators, as they ultimately control the purse strings, have the upper hand in the discussions s (Padró & Green, in press), whether doctoral degrees are appropriate and what type best meets needs is a discussion between university academics and senior leadership, users and end-user external stakeholders, and appropriate legislators and government agencies. The discussion should be integrational, rational, and transactional in scope to ensure a meaningful and successful result in terms of offering the appropriate programs that are attractive and sought after (Crane and Livesey 2003; Freeman 1984; Plaza-Úbeda et al. 2010).

References

Adler, N., L. Friedman, and Z. Sinuany-Stern. 2002. Review of ranking methods in the data envelopment analysis context. *European Journal of Operational Research* 140: 249–265.

Altbach, P.G., L. Reisberg, and L.E. Rumbley. 2009. *Trends in global higher education: Tracking an academic revolution: A report prepared for the UNESCO 2009 world conference on higher education*. Paris: United Nations Educational, Scientific and Cultural Organization. Retrieved from http://unesdoc.unesco.org/images/0018/001832/183219e.pdf.

Barnes, T. 2013. *Higher doctorates in the UK 2013*. Staffordshire: UK Council for Graduate Education.

Biloslavo, R., C. Bagnoli, and R.R. Figelj. 2013. Managing dualities for efficiency and effectiveness of organisations. *Industrial Management & Data Systems* 113 (3): 423–442.

Blume, S. 1986. The development and current dilemmas of postgraduate education. *European Journal of Education* 21 (3): 217–222.

Boud, D., and A. Lee. 2009. Introduction. In *Changing practices of doctoral education*, ed. D. Bound and A. Lee, 1–9. London: Routledge.

Bourner, T., R. Bowden, and S. Laing. 2001. Professional doctorates in England. *Studies in Higher Education* 26 (1): 65–83.

Bozeman, B. 2002. Public-value failure: When efficient markets may not do. *Public Administration Review* 62 (2): 145–161.

Bransford, J.D., A.L. Brown, R.R. Cocking, M.S. Donovan, and J.W. Pellegrino, eds. 2000. *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academies Press.

Bridgland, A., and C. Goodacre. 2005. Benchmarking in higher education: A framework for benchmarking quality improvement purposes. In *Proceedings, Educause Australasia*, 5–8. Auckland: April.

Brown, D.K. 2001. The social sources of educational credentialism: Status cultures, labor markets, and organizations. *Sociology of Education, Extra Issue: Current of Thought: Sociology of Education at the Dawn of the 21st Century* 74: 19–34.

Burgess, S., J. Lane, and D. Stevens. 2000. Job flows, worker flows, and churning. *Journal of Labor Economics 18* (3): 473–502.

Candlin, F. 2000. Practice-based doctorates and questions of academic legitimacy. *International Journal of Art and Design Education* 19 (1): 96–101.

Carter, S., J. Frazey, J.L. González Geraldo, and C. Trevitt. 2010. The doctorate of the bologna process third cycle: Mapping the dimensions and impact of the European higher education area. *Journal of Research in International Education* 9 (3): 245–258.

Chase, S., and R. Pruitt. 2006. The practice doctorate: Innovation or disruption? *Journal of Nursing Education* 45 (5): 155–161.

Christensen, K.K. 2005. *Bologna Seminar: Doctoral programmes for the European Knowledge Society, Salzbug, 3–5 February 2005.* Retrieved from http://www.cnaa.md/i/news/2015/11272015/salzburg_report_final.1129817011146[1].pdf.

Christensen, C.M., and H.J. Eyring. 2011. *The innovative university: Changing the DNA of higher education from the inside out*. San Francisco: Jossey-Bass.

Clark, B.R. 1983. *The higher education system: Academic organization in cross-national perspective*. Berkeley: University of California Press.

College of Information and Computer Sciences, UMass Amherst. 2018. PhD portfolio. Retrieved from https://www.cics.umass.edu/grads/phd-portfolio.

Collins, R. 2002. Credential inflation and the future of universities. In *The future of the city of intellect*, ed. S. Brint, 23–46. Stanford: Stanford University Press.

Costley, C., and S. Baker. 2012. Work-based doctorates: Professional extension at the highest levels. *Studies in Higher Education* 37 (3): 257–269.

Council of Australian Deans and Directors of Graduate Studies. 2007. *Guidelines on professional doctorates*. Retrieved from http://www.uhr.no/documents/guidelines_on_professional_doctorates.pdf.

Council of Ministers of Education, Canada. 2007. *Ministerial statement on quality assurance of degree education in Canada*. Retrieved from http://www.cmec.ca/Publications/Lists/Publications/Attachments/95/QA-Statement-2007.en.pdf.

Crane, A., and S.M. Livesey. 2003. Are you talking to me? Stakeholder communication and the risks and rewards of dialogue. In *Unfolding stakeholder thinking*, ed. J. Andriof, S. Waddock, S. Rahman, and B. Husted, vol. 2, 39–52. Sheffield: Greenleaf.

Crosier, D., D. Purser, and H. Smidt. 2007. *Trends V: Universities shaping the European higher education area*. Brussels: European University Association. Retrieved from: https://www.researchgate.net/profile/Hanne_Smidt/publication/248810872_Trends_V_Universities_shaping_the_European_HE_Area/links/56406dce08ae34e98c4e7fdb.pdf.

Davis, S., and J. Haltiwanger. 1999. Gross job flows. In *The handbook of labor economics*, ed. O. Ashenfelter and D. Card, vol. 3B, 2711–2805. Amsterdam: Elsevier.

Dellgran, P., and S. Höjer. 2012. The politics of social work research—PhD theses in Sweden. *European Journal of Social Work* 15 (4): 581–597. https://doi.org/10.1080/13691457.2012.710875.

Duke, N.K., and S.W. Beck. 1999. Research news and comment: Education should consider alternative formats for the dissertation. *Educational Researcher* 28 (3): 31–36. https://doi.org/10.3102/0013189X028003031.

Edwards, S. 2009. A professional practice-based doctorate: Developing advanced nursing practice. *Nurse Education Today* 29: 1–4.

Engels-Shwarzpaul, A.-C. 2013. Non-traditional ways to the doctorate: Introduction. In *Of other thoughts: Non-traditional ways to the doctorate: A guidebook for candidates and supervisors*, ed. A.-C. Engels-Schwarzpaul and M.A. Peters, 1–16. Rotterdam: Sense Publishers.

Ericsson, K.A. 2008. Deliberate practice and acquisition of expert performance: A general overview. *Academic Emergency Medicine* 15: 988–994.

European Higher Education Area. 2005. *Communiqué of the Conference of European Ministers Responsible for Higher Education, Bergen, 19–20 May 2005*. Retrieved from http://media.ehea.info/file/2005_Bergen/52/0/2005_Bergen_Communique_english_580520.pdf.

European University Association [EUA]. 2007. *Doctoral programmes in Europe's universities: Achievements and challenges – Report prepared for European universities and ministers of higher education*. Brussels: European University Association. Retrieved from: https://www.dcu.ie/sites/default/files/graduate_research/pdfs/doctoral_programmes_in_europe_s_universities.pdf.

Federal Ministry of Education and Research. n.d. *The path to a professorship*. Ministry website https://www.research-in-germany.org/en/jobs-and-careers/info-for-postdocs-and-junior-researchers/career-paths/path-to-professorship.html.

Federkeil, G., F.A. van Vught, and D.F. Westerheijden. 2012. Classifications and rankings. In *Multidimensional ranking: The design and development of U-multirank*, ed. F.A. van Vught and F. Ziegele, 25–38. Dordrecht: Springer.

Freeman, R.E. 1984. *Strategic management: A stakeholder approach*. Boston: Pitman.

Freie Universität Berlin. n.d. *PhD and postdoc*. University website http://www.mi.fu-berlin.de/en/stud/prom-habil/index.html.

Gannon, F. 2006. What is a PhD? *European Molecular Biology Organization* 7 (11): 1061.

Gill, T.G., and U. Hoppe. 2009. The business professional doctorate as an informing channel: A survey and analysis. *International Journal of Doctoral Studies* 4: 27–57.

Glass, J.C., G. McCallion, D.G. McKillop, S. Rasaratnam, and K.S. Stringer. 2009. Best-practice benchmarking in UK higher education: New nonparametric approaches using financial ratios and profit efficiency methodologies. *Applied Economics* 41: 249–267.

Green, B. 2012. Addressing the curriculum problem in doctoral education. *Australian Universities' Review* 54 (1): 10–18.

Guerin, C. 2015. Connecting the dots: Writing a doctoral thesis by publication. In *Research literacies and writing pedagogies for masters and doctoral writers*, 31–50. Leiden: Brill.

Hamann, T.H. 2009. Neoliberalism, governmentality, and ethics. *Foucault Studies* 6: 37–59.

Hesseling, P. 1986. *Frontiers of learning: The PhD octopus*. Dordrecht: Foris.

Hoddell, S., D. Street, and H. Wildblood. 2002. Doctorates – Converging or diverging patters of provision. *Quality Assurance in Education* 10 (2): 61–70.

Holley, K. 2010. Doctoral student socialization in interdisciplinary fields. In *On becoming a scholar: Socialization and development in doctoral education*, ed. S.K. Gardner and P. Mendoza, 97–112. Sterling: Stylus.

Huisman, J., and R. Naidoo. 2006. The professional doctorate: From Anglo-Saxon to European challenges. *Higher Education Management and Policy* 18 (2): 1–13.

Jackson, N. 2001. Benchmarking in UK HE: An overview. *Quality Assurance in Education* 9 (4): 218–235.

James, W. 1903. The Ph.D. octopus. *The Harvard Monthly. 36* (1), 7.

Kot, F.C., and D.D. Hendel. 2012. Emergence and growth of professional doctorates in the United States, United Kingdom, Canada and Australia: A comparative analysis. *Studies in Higher Education* 37 (3): 345–364.

Kuhn, T.S. 1970. *The structure of scientific revolutions*. 2nd ed. Chicago: University of Chicago Press.

Lee, A., and D. Boud. 2009. Framing doctoral education as practice. In *Changing practices of doctoral education*, ed. D. Bound and A. Lee, 10–26. London: Routledge.

Lester, S. 2004. Conceptualising the practitioner doctorate. *Studies in Higher Education* 29 (5): 757–770.

Looks Good on Paper. 2011. *Times Higher Education Supplement*. Retrieved from https://www.timeshighereducation.com/features/looks-good-on-paper/416988.article.

Lowe, J. 2000. International examinations: The new credentialism and reproduction of advantage in a globalising world. *Assessment in Education: Principles, Policy & Practice* 7 (3): 363–377.

Malfroy, J. 2005. Doctoral supervision, workplace research and changing pedagogic practices. *Higher Education Research & Development* 24 (2): 165–178.

Manchester Metropolitan University Research and Knowledge Exchange 2013. *Guidelines for PhD by publication and PhD by practice.* Retrieved from https://www2.mmu.ac.uk/media/mmuacuk/content/documents/graduate-school/regulations-procedures/guidelines-phd-published-work.pdf.

Marginson, S., and M. van der Wende. 2007. To rank or be ranked: The impact of global rankings in higher education. *Journal of Studies in International Education* 11 (3/4): 306–329.

Maxwell, T.W., and P.J. Shanahan. 1997. Towards a reconceptualisation of the doctorate: Issues arising from comparative data relating to the EdD degree in Australia. *Studies in Higher Education* 22: 133–150.

McWilliam, E.L., P.G. Taylor, and P. Singh. 2002. Doctoral education, danger and risk management. *Higher Education Research and Development* 21 (2): 119–129.

McWilliam, E.L., A. Lawson, T. Evans, and P.G. Taylor. 2005. Silly, soft and otherwise suspect': Doctoral education as risky business. *Australian Journal of Education* 49 (2): 214–227.

Mellros-Bourne, R., C. Robinson, and J. Metcalfe. 2016. *Provision of professional doctorates in English HE institutions: Report for HEFCE by the careers Research & Advisory Centre (CRAC), supported by the University of Brighton*. Cambridge: Careers Research & Advisory Centre. Retrieved from http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2016/Provision,of,professional,doctorates/Professional_doctorates_CRAC.pdf.

Meritosis, J. 2016. Credentials reform: How technology and the changing needs of the workforce will create the higher education system of the future. *Educause Review* 51 (3): 26–34.

Monash University. 2017. *Thesis including published works: Guidelines for a thesis including published works*. Retrieved from https://www.monash.edu/graduate-research/supervisors-and-examiners/examiners/publication.

Morgan, K.J. 2011. Where is von Humboldt's university now? *Research in Higher Education-Daigaku Ronshu* 42: 325–344.

Nerad, M. 2004. The PhD in the US: Criticisms, facts, and remedies. *Higher Education Policy* 17: 183–199.

Neumann, R. 2005. Doctoral differences: Professional doctorates and PhDs compared. *Journal of Higher Education, Policy and Management* 27 (2): 173–188.

Nimkulrat, N. 2011. Problems of practice-based doctorates in art and design: A viewpoint from Finland. In *Proceedings of ICPD-2, 2nd international conference on professional doctorates, Edinburgh, UK, 20th-21st April*, 58–61. London: UK Council for Graduate Education.

Norcross, J.C., and P.H. Castle. 2002. Appreciating the PsyD: The facts. *Eye on Psi Chi* 7 (1): 22–26. Retrieved from: http://cms.bsu.edu/-/media/www/departmentalcontent/psychology/docs/psyd.pdf.

Northcott, D., and S. Llewellyn. 2005. Benchmarking in UK health: A gap between policy and practice? *Benchmarking: An International Journal* 12 (5): 419–435.

Nyquist, J.D., and B.J. Woodford. 2000. *Re-envisioning the Ph.D.: What concerns do we have?* Pullman: Center for Instructional Development and Research, University of Washington. Retrieved from https://depts.washington.edu/envision/resources/ConcernsBrief.pdf.

Organisation for Economic Cooperation and Development [OECD], European Union, and UNESCO Institution for Statistics. 2015. *ISCED 2011 operational manual: Guidelines for classifying national education programmes and related qualifications*. Paris: OECD Publishing. Retrieved from http://unesdoc.unesco.org/images/0023/002323/232343e.pdf.

Ostriker, J.P., C.V. Kuh, and J.A. Voytuk, eds. 2011. *A data-based assessment of research-doctorate programs in the United States*. Washington, DC: National Academies Press.

Padró, F.F. 2004. *Statistical handbook on the social safety net*. Westport: Greenwood Publishers.

Padró, F.F., and Jonathan H. Green. in press. TQM's impact on the legal apparatus: Informing and directing compliance practices. In *Education and the law: Considering the legal context of schools*, ed. K. Trimmer, R. Dixon, and Y. Findlay. Dordrecht: Springer.

Park, C. 2005. New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management* 27 (2): 189–207.

Park, C. 2007. *Redefining the doctorate. The Higher Education Academy discussion paper.* York: The Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/redefining_the_doctorate.pdf.

Plaza-Úbeda, J.A., J. de Burgos-Jiménez, and E. Carmona-Moreno. 2010. Measuring stakeholder integration: Knowledge, interaction and adaptational behavior dimensions. *Journal of Business Ethics* 93 (3): 419–442.

Powell, S., and E. Long. 2005. *Professional doctorate awards in the UK*. Staffordshire: UK Council on Graduate Education. Retrieved from: https://www2.le.ac.uk/departments/doctoralcollege/about/external/publications/professional-doctorates.pdf.

QS World University Rankings. 2017. *Who rules? The top 500 universities in the World 2018.* Retrieved from https://www.topuniversities.com/university-rankings/world-university-rankings/2018.

Quality Assurance Agency for Higher Education [QAA]. 2015. Characteristic statement: Doctoral degree – UK quality code for higher education. In *Part A: Setting and maintaining academic standards*. Glouster: Quality Assurance Agency for Higher Education. Retrieved from http://www.qaa.ac.uk/en/Publications/Documents/qualifications-frameworks.pdf.

Scott, D., A. Brown, I. Lunt, and L. Thorne. 2004. *Professional doctorates: Integrating professional and academic knowledge*. Maidenhead: Open University Press.

Servage, L. 2009. Alternative and professional doctoral programs: What is driving the demand? *Studies in Higher Education* 34 (7): 765–779.

Sharmini, S., R. Spronken-Smith, C. Golding, and T. Harland. 2015. Assessing the doctoral thesis when it includes published work. *Assessment & Evaluation in Higher Education* 40 (1): 89–102. https://doi.org/10.1080/02602938.2014.888535.

Smith, M. 2018. Credentialism. *International Encyclopedia of the Social Sciences*. Retrieved from http://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/credentialism.

Stephenson, J., M. Malloch, and L. Cairns. 2006. Managing their own programme: a case study of the first graduates of a new kind of doctorate in professional practice. *Studies in Continuing Education* 28 (1): 17–32.

Sullivan, T.A., C. Mackie, W.F. Massy, and E. Sinha, eds. 2012. *Improving the measurement of productivity in higher education*. Washington, DC: National Academies Press.

Taylor, S., and N. Beasley. 2005. *A handbook for doctoral supervisors*. London: Routledge.

Teichler, U. 2008. Indicators concerning rationales and modes of doctoral study and research in economically-advanced countries. In *UNESCO Forum on Higher Education, Research and Knowledge Trends and Issues in Postgraduate Education: Challenges for Research International Experts' Workshop, 5–7 March, 2008, Dublin City University (DCU) Dublin, Ireland – Final Report*, ed. UNESCO, 24–27. Retrieved from http://unesdoc.unesco.org/images/0016/001607/160744e.pdf.

Thomson, P. 2013. PhD by publication or PhD and publication - part two. Retrieved from https://patthomson.net/2013/04/22/phd-by-publication-or-phd-and-publication-part-two/

United Kingdom Council for Graduate Education [UKCGE]. 1997. *Practice-based doctorates in the creative and performing arts and design*. Staffordshire: United Kingdom Council for Graduate Education. Retrieved from www.ukcge.ac.uk/media/download.aspx?MediaId=1289.

United Nations Educational, Scientific and Cultural Organization [UNESCO]. 2010. *World Conference on Higher Education 2009: Final Report*. Paris: United Nations Educational, Scientific and Cultural Organization. Retrieved from: http://unesdoc.unesco.org/images/0018/001892/189242e.pdf.

Weineck, S.B., D. Koelblinger, and T. Klesslich. 2015. Medizinische Habilitation im deutschsprachigen Raum: Quantitative Untersuchung zu Inhalt und Ausgestaltung der Habilitationsrichtlinien. *Der Chirurg* 86 (4): 355–365.

Wildy, H., S. Peden, and K. Chan. 2015. The rise of professional doctorates: Case studies of the doctorate in education in China, Iceland and Australia. *Studies in Higher Education* 40 (5): 761–774.

Winter, R., M. Griffiths, and K. Green. 2000. The "academic" qualities of practice: What are the criteria for a practice-based PhD? *Studies in Higher Education* 25 (1): 25–37. https://doi.org/10.1080/030750700115993.

Heutagogy in Postgraduate Education: Cognitive Advantages for Higher Degree Online Students

11

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Contents

Abstract

As the nature of postgraduate education changes with the inclusion of diverse groups of students who may live at a distance (sometimes in remote areas) and new and emerging technological affordances, shifts are signaled in relationships with peers, teaching staff, and higher education organizations. Heutagogy, as a self-directed approach to learning, supports higher-level cognitive function, double-loop learning, and a shift from educator centered to learner initiated and driven learning. Provided is an account of heutagogy in the form of three case studies that illustrate heutagogy in the teaching, learning, and supervision of online postgraduate education students through a variety of traditional, immersive, and engaging

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emerging online tools. By discussing the use of both traditional and emerging innovative ICT tools, provided is an overview of how postgraduate students can demonstrate heutagogical approaches to learning, offering readers ideas and alternatives to use in their profession as online educators.

Keywords
Heutagogy · Andragogy · Postgraduate student · Distance education · Online learning · Technologies

Introduction

Higher degree research students are important to all universities, and it is imperative that these students are supported throughout their postgraduate journey. With the increase of technology across education delivery services, tertiary educators need to reconsider pedagogical practices for learning pathways for all online students, particularly postgraduate students. Traditional learning models use a pedagogical approach to content delivery where the role of educator is to design and control the learning process. Yet with increasing diversity of the student corpus with the massification of higher education (Teichler 1998) and new forms of technology, it is important to consider shifts in how learning is being shaped and constituted. This is particularly pertinent to educators who are responsive to a range of student needs and take up a resonant approach to foster higher-order learning in our practice. It is noted that approaches to learning have shifted in higher education over the last five decades from andragogy to heutagogy.

Andragogy, or self-directed learning, has been the model of choice for adult learning since the mid-1970s (Knowles 1975). Online learning often reflects an andragogical approach where the academic supports self-directed learning principles showing students where and how "to find information, relat(ing) information to learner experience and plac(ing) a focus on problem-solving within a real-world situation" (Blaschke 2012, 58).

In this chapter, case studies are presented that articulate a heutagogical approach to a technology-rich learning design in postgraduate settings that demonstrates self-determined learning. Heutagogy (Hase und Kenyon 2001) is gaining popularity for postgraduate studies as it positions the learner at the center of his or her own learning (Blaschke 2012). Heutagogy can be seen as an effective online learning theory for two reasons: (1) it is considered by some to be a "net-centric" theory that complements today's technologies; and (2) it supports postgraduate students who already possess industry-based competency, to build and develop learner capabilities (Blaschke 2014).

Postgraduate study, particularly through distance education, can be a lonely time for students, and it has been shown that isolation and lack of connection are two factors that influence student drop-out rates (Angelino et al. 2007; Kanuka und Jugdev 2006). Importantly, it has been demonstrated that students learn more effectively and are more engaged when they can perceive teaching, social, and

cognitive presence (Garrison 2007). A strategy for providing students with a sense of connectedness is through the use of innovative online learning technologies.

Developing research ideas with students who are located great distances from the university, who may be holidaying, traveling, working, or simply lead transient lives, brings new challenges to online higher education for postgraduate students. For some postgraduate students, access to online teaching is limited particularly when one is on the move or living in remote communities in Australia. New and emergent scholars may find themselves in isolated locations, which can bring a unique richness to their research but also technical and logistical challenges. As technical problems are overcome, the real challenges come to the fore, in particular fostering opportunities for "postmodern emergence" in academia (Somerville 2007) and very personal work of individuation (Dirkx und Mezirow 2006). One needs to create the right moment and space for in-depth theoretical and philosophical discussions that disperse seeds of creative thought, theory, and imaginative wondering. Through the use of immersive environments, one has the capacity to develop greater connectedness between an individual student and his/her supervisor including between peers.

Of particular interest is the spontaneous use of the elearning spaces by students as a parallel platform to formal education spaces afforded through learning management systems (LMS). In addition to the structured use of digital technologies instigated by universities, students also spontaneously engage in self-selected communities of practice, "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger-Trayner und Wenger-Trayner 2015, 1).

In distance education contexts, various digital technologies can be likened to a cyber coffee shop, the virtual equivalent of on-campus face-to-face spaces where peer conversations occur and relationships flourish when lecturers are not present. These relaxed conversations break down boundaries between peers. Online teaching spaces can be seen as constrained within their written (and unexpressed) protocols around appropriate professional communications. Some of these digital technologies afford a place for students to vent frustrations and speak candidly with one another. They can also provide students with immediacy in their potential for instant peer feedback when they post questions. When students do not feel their pastoral needs are met through the more formal learning structures, they turn to their online community to have these needs met. Although there can be hostility when misunderstandings occur, these peer groups can also provide support and encouragement for members.

The chapter commences with an account of our context as four educators from an Australian university. The definition and differentiation of the notion of androgogy and heutagogy in postgraduate education settings are provided in this chapter. Consideration is then given to the significance of double-loop learning (Blaschke 2012) and high-level cognitive connections as aspects of heutagogy. In the latter section of the paper, presented are three case studies of postgraduate students undertaking a *Graduate Certificate in Education (Grad Cert Ed)*, *a Master of Education (MEd)*, and a *Doctor of Philosophy (PhD)*. Analyses of heutagogy

are provided with each case and a discussion is leveraged on the relevance of a heutagogical approach to learning for postgraduate education.

Context

These case studies were drawn from composite student experiences studying at the University of New England (UNE), a regional university in New South Wales, Australia. There are approximately 19,200 students studying at UNE with 77% studying in off-campus mode (Password protected citation.) (University of New England 2016). This means that these students choose to study totally online. Between 4,000 and 5,000, students enroll in the School of Education, with 12% enrolled to study on-campus. These numbers have declined in the past 3 years, from 15%. The School of Education has the highest number of online students across the university with 88% choosing to study via this mode (As above.) (University of New England 2016).

Literature Review

The following review looks briefly at the historical and contextual literature surrounding andragogy and how this concept proved insufficient when explaining the higher adult learning. With the introduction of heutagogy as a way of addressing the learning needs of highly competent adults, it has become clear that this approach also requires elements of high-level cognitive function for successful engagement.

Andragogy

In Knowles (1970) seminal book *The Modern Practice of Adult Education: Andragogy Versus Pedagogy*, he introduces the term "andragogy" for adult learners for whom the simple model of transmitting knowledge and skills was not sufficient.

Contrary to what is often reported, Knowles did not create the term "andragogy," instead he was introduced to the term by a Yugoslavian adult educator in the mid-sixties. "They coined the label 'andragogy' which is based on the Greek word aner (with the stem, andr), meaning 'man, not boy' or adult" (Knowles 1970, 42). Knowles' writing reflected 1970 understandings of pedagogy such as "the experience learners bring to a learning situation is of little worth" and "people are ready to learn whatever society (especially the school) says they ought to learn, provided the pressures on them (like fear of failure) are great enough" (44). As with most things in education, pedagogy has evolved significantly since the 1970s.

Andragogy, or s*elf-directed learning*, has been the model of choice for adult learning since the mid-1970s. Knowles summarizes andragogy as based on four assumptions characterizing learners as they move from dependency to self-directedness; accumulating experiences that can be drawn on for learning; a readiness to

learn based on social roles, and understanding learning as performance-centered (1970, 44–45). According to McAuliffe et al. (2008, 2), while pedagogy is a teaching theory, andragogy is a learning theory. The authors also state that while pedagogy is based on transmitting content, andragogy focuses on "facilitating the acquisition of the content". In contrast to pedagogy, andragogy is seen as an active process where adult learners are expected to identify their needs and plan how to meet these learning needs. Online learning today often reflects an andragogical approach where the educator is designer, manager, and provider of much of the content and resources available to students.

This review will now explore the next level of adult learning where the student becomes the center of their own learning experiences.

Heutagogy

With the availability of technologies and the requirements of the twenty-first century societies for intellectually agile digital literate citizens, in this chapter heutagogy is viewed as a key aspect of learning in the twenty-first century. The concept has its origins in the work of two Australian academics Hase und Kenyon (2001) who, recognizing that *andragogy* did not go far enough in separating the teacher/educator-learner relationship for adult learners (2001, 1), coined the term *heutagogy.* Once again, the term was appropriated from "the ancient Greek for 'self' with some adjustments and the 'agogy' added" (2007, 112). "Agogy" means insights to action (Collins English Dictionary 2016). Hase and Kenyon observed that in contexts where technology enables almost limitless information "we should be looking at an educational approach where it is the learner... who determines what and how learning should take place" (2001, 1). The primary tenet of heutagogy being *self-determined* learning.

A heutagogical approach to learning design, otherwise known as *self-determined learning*, is gaining popularity for postgraduate studies as it places the learner at the center of his or her own learning. Heutagogy is seen as an effective online learning theory for two reasons: first, it is considered by some to be a "net-centric" theory that compliments today's technologies (Anderson 2010); and second, it supports post-graduate students who already possess industry-based competency, to build and develop learner capabilities (Blaschke 2014).

There are significant differences between andragogy to heutagogy that are relevant to postgraduate education. Andragogy utilizes single-loop learning theory, which at its simplest involves a linear progression of problem – action – outcome. In contrast, heutagogy requires double-loop learning where informed choices require "deeper thinking and challenges the underlying assumptions and premises that support our stated goals, values and strategies" (Synnott 2013, 126). Blaschke (2012) highlights a model that demonstrates the difference between single- and double-loop learning in Fig. 1.

Hase und Kenyon (2007) also highlight another important difference between andragogy and heutagogy in the field of adult education. The world today requires

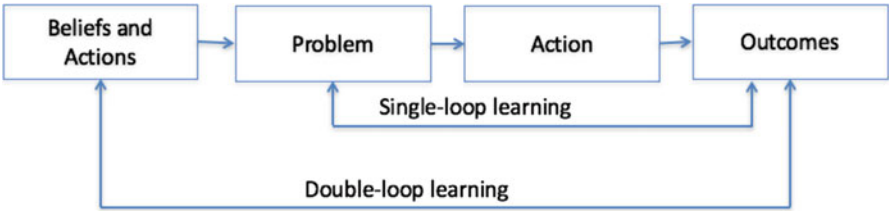

Fig. 1 Single- and double-loop learning (Blaschke 2012, 60)

capable people who can adapt quickly and creatively to changing environments (Hase und Kenyon 2001). Andragogy, to a large extent, focuses on developing competencies, or skills and knowledge. Hase and Kenyon (2007, 112) argue that for deep learning to take place it requires "an integrative experience where a change in behaviour, knowledge or understanding is incorporated into the person's existing repertoire of behaviour and schema." Where competency only requires knowledge and skills to be repeated or retrieved, capability "is a holistic attribute" requiring skills and knowledge to be reproduced in unfamiliar or novel situations (Hase und Kenyon 2007, 113). Blaschke interprets heutagogy as requiring a dual focus on competencies and capabilities which in turn "addresses the needs of adult learners in complex and changing work environments" (2012, 60).

Being true to Hase and Kenyon's (2001, 5) model where "assessment becomes more of a learning experience rather than a means to measure attainment," McAuliffe et al. (2008) highlight the problems associated with adopting a heutagogical approach within credentialing institutions. This can be problematic in tertiary institutions where measuring attainment is at the heart of gaining accreditation for a profession. Hase and Kenyon state that educators "should relinquish any power we deem ourselves to have" and concern ourselves with "developing the learner's capability not just embedding discipline based skills and knowledge" (2001, 5). These authors also acknowledge that tertiary and vocational education should be about "developing people who can cope with a rapidly changing world, a flexible workplace and uncertainty . . . be proactive rather than simply reactive in their thinking, and who can be more involved citizens" (2000, 6). Hase and Kenyon also state that education needs to go beyond the teacher, academic, and the intuition's self-interest. Figure 2 demonstrates McAuliffe et al.'s interpretation of Hase und Kenyon's (2001) seven key principles of heutagogy that are reflected in many postgraduate programs today.

In today's world at the postgraduate level, where competent professionals return to study, a heutagogical approach is not only essential but also desirable for a positive and productive outcome for these higher degree students. At this level, it is not about the academic supervisor being in charge of, or dominating the learning process, but instead guiding and assisting the student to negotiate the world of higher learning to enable their self-determined professional goals. It can also argued that the high-level cognitive connections required of self-determined learning have not yet been explored within the heutagogical frame.

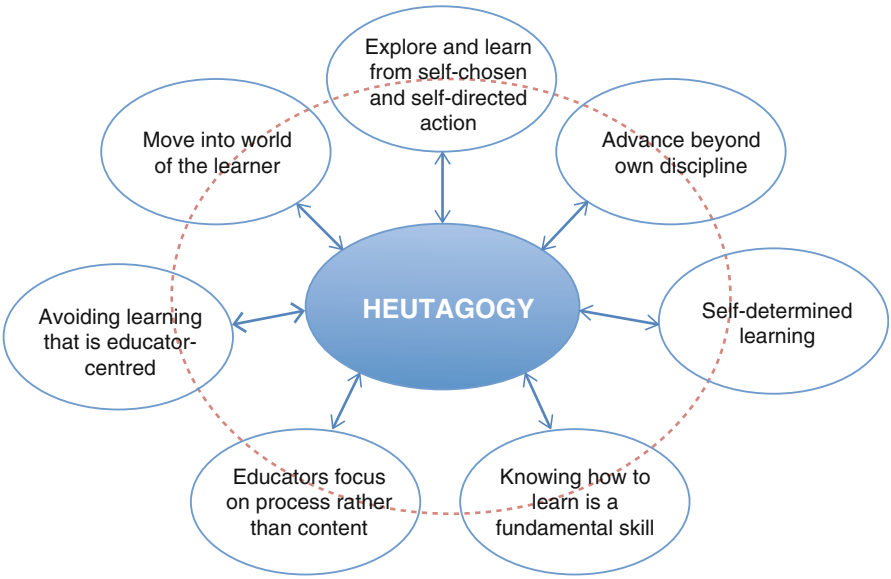

Fig. 2 Principles of heutagogy (McAuliffe et al. 2008, 4)

Hase und Kenyon (2001, 2007) situated Heutagogy within complexity theory moving away from simple cause-and-effect or linear models. Where andragogy takes a self-directed, linear approach to learning, heutagogy focuses more on a learner-centered philosophy encouraging autonomous learner practices. As such, heutagogy is recognized as an important characteristic of online and distant learning and can be aligned with the affordances of post Web 2.0 (for instance, the potential of mobile social media to support communities of practice) (Cochrane et al. 2012). In discussing the role of heutagogy in open and distance learning, Jakobsdottir et al. (2010, 108) observe "online professional learning communities hosted within social networking platforms have become the sites that support interdependent self-directed learning".

In Yilmaz und Keser's 2016 critical review of elearning environments that supported online education programs, motivation and the development of higher-order thinking skills have been determined as essential to students remaining in distance education courses. The integration of critical, metacognitive, and reflective thinking enables students to take an active role in their online learning. These higher-order cognitive skills assist students in improving their learning through the purposeful construction of knowledge where the students are required to consider their own learning and cognitive processes.

A heutagogical approach also aligns with a more fluid perspective on transitions within higher education. Gale and Parker identify three types of transition in higher education research: firstly, transition as induction via identified pathways; secondly as trajectoral development through distinct stages; and finally focusing on the whole life of the student; "transition as becoming" (2014, 738). Like Gale and Parker,

identified with the third approach is the most useful and effective position, specifically acknowledging the multiplicity of narrative and subjectivities of students' experiences and the need to devise flexible strategies, varied points of access to resources, provide alternate modes of study, and acknowledge diverse ways of knowing (Gale und Parker 2014). Research, Gale and Parker argue "needs to be cognizant with student's lived reality, not just institutional and/or systemic interests" (2014, 747). Not taking up this challenge risks assigning some students to marginal positions, devaluing types of knowledge and ways of being and is therefore counterproductive for all involved. Thus, heutagogy is in alignment with both the use of existing and emerging technologies and can be embedded in postgraduate education contexts, particularly those that require high-level cognitive connections.

High-Level Cognitive Connections

The development of high-level capabilities necessary for self-determined learning requires advanced skills of critical reflection and critical thinking that come from well-developed self-awareness and self-knowledge. Heutagogy is a complex problem-solving process for the student as they tussle with ways and means to enable their end goal. To be successful, students must engage in critical reflection requiring the advanced cognitive tools of metacognition and self-regulation. Metacognition includes knowledge of one's cognition including declarative and procedural knowledge, as well as being able to self-regulate the process through continual monitoring, self-correction, and controlling the learning process. These elements developed and created through "interactions with others, instigating change and critical problematisation" (Tarricone 2011, 44). Interaction with others, including peers and supervisors, provides postgraduate students the necessary scaffolded support and opportunities to verbalize the problem-solving process required within this complex learning environment. Self-knowledge and self-efficacy impact on purposeful reflection and the problem-solving process and are strong predictors of achievement (Schunk und Zimmerman 2007).

Self-determined learners must be highly self-regulated and with the ability to plan, monitor, and control the strategies necessary for a heutagogical-learning journey. Self-efficacy and personal agency (Bandura 1997; Zimmerman 1995) can be negatively impacted on this challenging journey and therefore interaction with others including peers who are either going through the process or supervisors who have walked this path before can mitigate self-doubt and low self-efficacy that can impact on the learning process. While Hase und Kenyon (2001) state that education needs to go beyond the teacher, academic, and the intuition's self-interest, it can be argued that in the online environment the educator and peer are pivotal in assisting postgraduate students in navigating a pathway towards self-determined goals and learning.

A further iteration of this process was highlighted by Somerville (2008) who developed a "pedagogical process" known as postmodern emergence that was designed to meet the needs of postgraduate students. Somerville was particularly

concerned "for those students for whom there was no choice but a radical alternative methodology, no other way to ask the questions or generate the knowledge with which they were so deeply entwined" (2008, 209), addressing the needs of students who, for some reason, are not perceived to, or perceive themselves to fit, a hegemonic student status. Postmodern emergence offers latitude and space for students in different circumstances to engage in academia in a generative and supportive fashion that responds to the rhythms of the student and their life.

Methodology

Educational case studies have been described as "bounded" texts suggesting that there are definitive edges of the narrative (Smith 1978; Stake 1995; Merriam 1998). Researchers acknowledge that while there is a sense of limitation or restriction in this approach, there is recognition of the multiplicity of every case including the context, the background, and the diversity of the individual experience (Johnson und Christensen 2010, 395). In this chapter presented are collective or multiple case studies to demonstrate not only the varied experiences of the postgraduate student but the different ways in which supervisors can meet their needs through alternative technologies.

In keeping with Stake's approach to analysis of case studies and desire for validation through investigator triangulation, engaged was a collaborative approach bringing together the four researchers (1995, 107). Each researcher brought different levels of postgraduate supervisory experience, epistemological standpoints, and disciplinary backgrounds to the analysis process.

Case Studies

Case Study 1: Heutagogy Through Facebook (Graduate Certificate)

The ubiquitous and vigorous use of social media influences our lives and seeps into spheres of higher education. Over time the "needs, capabilities and interests" of student populations shift and change and it possible that demographics raised exclusively on text media alone may think and learn differently to those immersed in social media, such as Tumblr, Instagram, and Facebook (Downes 2010, 28). With its capacity to increase social connectedness, social media has been described as "the new black" in higher education settings (VanDoorn und Eklund 2013, 1). By far the biggest influence is Facebook, a social media monolith, with on average 1.04 billion daily users reported in 2015 (Facebook, Inc 2016).

Although there is literature on the widespread use of Facebook in student populations (Whittaker et al. 2014), the educational potential of this social media software in promoting collaborative learning practices (Goodband et al. 2012) and its use in formal learning settings (Magogwe et al. 2015) there is still much to explore in relation to postgraduate students' purposeful engagement in Facebook in higher education academic contexts (Goodband et al. 2012). Of particular interest is

the heutagogical use of the Facebook by postgraduate students as a parallel platform to the formal education spaces afforded through learning management systems (LMS). In addition to the structured use of Facebook instigated by universities, postgraduate students also spontaneously engage in self-selected communities. For many students combatting the tyranny of distance, Facebook pages or groups can be likened to the on-campus face-to-face spaces where peer conversations take place around lesson content and relational trust is built.

For postgraduate student communities to thrive in social networking sites, there needs to be the facility for collective action, shared rituals, and social regulation. In addition, participants must create and visit their profiles with some regularity (Parks 2011). As Facebook is often used for other forms of social communication and students may already be using the software during the day, its ease of use lends itself to the development of group belonging and attachment to a higher education community (Parks 2011). When peers connect with each other via Facebook, they post and comment on messages and share information online in a range of media formats without spatial and temporal constraints (Hou et al. 2015).

The popularity of Facebook over formal meet and greet spaces in the lecturer designed LMS space suggests the importance of "technological agency" where the creation of a profile leads to friendships and meaningful social connections (Parks 2011, 119). Technological agency is embedded in the learner-driven process of heutagogy and is demonstrated in the case study of Kelly below. The following vignette highlights how, running alongside learning management software, Facebook can afford a place for students to speak candidly with one another, ask for assistance to find resources, and engage with peers to learn context and about themselves as learners.

Kelly is a high achieving student from coastal New South Wales (NSW). She is undertaking a post-graduate Graduate Certificate in Education course and aspires to be an English teacher when she graduates. Kelly's Facebook group started when students from one of her units commenced contributing ideas together on a closed Facebook group without lecturer presence. The group has grown as the members progressed on to new units and other students have joined. In the early stages, the participants began by asking questions such as: "I need the reading, where do I find it?" or "I can't find the text. Where do I find that?" But now the group members are posting regularly and messaging each other to share ideas and offer support.

The peer feedback in this group is immediate. Because Kelly's Facebook group are studying the same unit, postings are usually responded to with an answer or advice within a few minutes. Because of the timeliness of this social media, Kelly participates more on Facebook than she does in the LMS forums. Kelly uses Facebook on her mobile device and receives instant notifications. Although the LMS dispatches emails that Kelly can access through her smartphone, this avenue makes it a lot more difficult to obtain the immediate feedback available through Facebook due to having to sign into the LMS to access the information.

Ideas are tossed back and forth in this Facebook group. This specific assistance with assignments is very helpful for Kelly when she is struggling with a particularly challenging concept. She takes opportunities to express her own ideas and listen to others, thus broadening her own understandings. These dialogic opportunities both challenge and extend

her thinking. Through this online experience, Kelly has begun to recognise that she may commence her studies without completely understanding all of the aspects of an assignment question. She knows that she can draw conclusions too fast; reading the question quickly without dissecting it and, as a consequence, launch in prematurely. In Facebook, Kelly sees how others interrogate the assignment material and is alerted to task-related aspects that initially she did not consider were important. Through this peer interaction, she has learned that she can improve her study skills and develop more effective ways of approaching assessment tasks.

Kelly's peers also elaborate on assignments when she does not understand the lecturers' explanations and asks for their help. Sometimes draft writing is spontaneously exchanged. In a reciprocal relationship, Kelly reads and provides feedback on assignments with others. Kelly is mindful that the articles she finds and contributes in Facebook may be used by peers leading to her work appearing unoriginal to a marker. Careful to avoid being questioned about plagiarism, Kelly assists others who are struggling, but only provides starter text resources. Kelly is also aware of the peril of disseminating incorrect information as she has seen students receive incorrect information from their peers. Kelly is therefore cautious when she discusses an assignment or particular activity. Kelly enjoys the freedom of Facebook and is wary about the exposure of LMS forum posts. Kelly is concerned that the lecturers judge the quality of her LMS posts and may be influenced by these perceptions when grading her assignments. Therefore, Facebook, for her, is a more relaxed and safe way to communicate with peers.

Analysis

This case study uses an enactment of complexity theory through spontaneous nonlinear development of heutagogical learning via the software platform. The students use Facebook for both pastoral and academic purposes, demonstrating technological agency through their learning oriented social connections. As illustrated by Kelly, the coconstruction of more academic participatory practices that target double-loop learning (Blaschke 2012) evolves over time in an emergent way. While the site initially performs a functional purpose for locating resources, the students began engaging in deeper learning practices of exchanging ideas through online dialogue, reading peer material carefully to provide feedback, and challenging personal understandings of how to undertake academic study.

Kelly displays heutagogical capabilities in promoting learner-driven learning. She critically deploys metacognitive processes to engage with information, experiences, and ideas as she reflects on her learning with others in the group. She executes cognitive control using the dialogue to deconstruct assignment questions and evaluating her approach to assignments. In this way, she self-monitors, self-corrects, and self-regulates (Bannister-Tyrrell et al. 2014). The inter-reflection that supports Kelly's self-regulation is particularly important for postgraduate students who may need to build relational trust in online contexts before more substantive metacognitive interchanges take place. The immediacy of responses afforded through Facebook promotes interdependence that is less fluid in the LMS site. Kelly is able to ask questions and check her assumptions and perceptions quickly.

Kelly's experience also illustrates a reflective component of heutagogy. Kelly controls, monitors, and regulates her learning strategies (Tarricone 2011) through her

reflection on both Facebook and the LMS. She modifies how she approaches peer feedback on the basis of the misinformation she has seen disseminated by peers in Facebook. She is careful to avoid posting material that could suggest plagiarism when appropriated by others and submitted for assessments. She is aware of the judgments of lecturers in the LMS and therefore posts judiciously, using Facebook for forum posts that may appear ignorant or suggest a lack understanding by others.

Kelly and her peers use Facebook to address the tyranny of distance. Where Kelly uses social media technology to participate in heutagogical relationships with peers, in the next case Chaz relies on Cloud technology to access the organizational infrastructure of the university. Unlike Kelly, Chaz demonstrates heutagogy through the use of technology to mitigate the issue of studying in an area separated from both higher education institutions and ready access to internet technology.

Case Study 2: Heutagogy Through Cloud Technology (Masters)

Cloud technology is a time-saving tool that provides an online storage space for documents, videos, and other forms of data. It is a composite of software and infrastructure located beyond the individual user's computer (i.e., in the cloud – on a computer located elsewhere). First made available in 2008, cloud technology is low cost, easily accessible, and requires little maintenance (Yang und Tate 2012). It is an apt tool for collaborations accessible to nominated users and provides easy and fast access to documents that might otherwise take time to be emailed or sent in some other fashion (Wiegand 2009). In higher education, networks of researchers have often used cloud technology as a means for sharing resources (McWhorter und Julia Delello 2015). In this case study, cloud technology was deemed the most appropriate tool for disseminating readings to a geographically isolated postgraduate student.

Chaz is mature aged, enrolled in a Master of Education and living in the remote regions of Australia. His goal is to complete a 50,000 word thesis on political and spatial relations in education. It is a contentious and relatively unmarked field that sits on the periphery of the discipline. It is original and exploratory scholarly work that may lead to a PhD.

Driven by his life experiences, Chaz talks of his desire to set an example to his children and grandchildren. Chaz is of quick wit and sharp intellect. He has robust political views and a healthy suspicion about theoretical positions of a neoliberal and postcolonial academia. Like many post graduate students, however, he struggles to articulate these theoretical and conceptual frameworks in the text. Chaz is, however, committed to meeting his goals and has demonstrated a capacity for self-directed learning in his undergraduate studies. His supervisors are convinced of both his intellect and his practical capacity to undertake original research.

The transitory life Chaz leads at this time is what marks him apart from many of his peers. He leads an isolated and solitary life, working in remote areas of Australia and moving regularly. There is often limited and intermittent internet access in such areas. When Chaz is able, he engages in enthusiastic supervision sessions and regularly demonstrates a thirst for readings that will challenge him.

The challenge for Chaz's supervisors is to develop a flexible learner defined procedure. In this case, they need to be at the ready to respond to Chaz's robust theoretical debates and

ensuring a ready supply of multiple and diverse readings. His capacity to download books and articles is precarious and irregular. The solution is to provide 'readings dumps' on 'clouds' so that whenever he is in a location that can cope with large downloads, he can access them.

Given Chaz cannot predict when he will have such access to the internet, the supervisor needs to be ready to respond at short notice. Given too that Chaz is in a state of productive theoretical and conceptual exploration, the supervisors need to have multiple readings at hand. Supporting Chaz has required a willingness to be flexible, responsive and open to the unexpected.

Analysis

In this case study, the rhythms of a life in a remote landscape direct the relationship between supervisors and student. As Somerville (2007) notes, there are some cases in which the "radical alternative" is the most fitting method. In Chaz's unusual circumstances, marked by isolation and intermittent contact, fluidity is required and a willingness of the supervisors to be "at the ready" to respond to Chaz's requirements. Chaz is, however, not a needy student. On the contrary, he consistently demonstrates an heutogogical approach to his studies through a willingness to work with and around the challenges of undertaking postgraduate studies while following such a nontraditional student lifestyle (Blaschke 2012). Chaz emanates the qualities described by Hase und Kenyon (2001) through his adaptability to a transient life while still engaging in high order educational undertakings.

In supporting Chaz's postgraduate research, the university and the supervisors decenter the mechanisms of the institution by employing the principles of heutagogy (McAuliffe et al. 2008, 4). In utilizing specific times of engagement through cloud technology, the university moves into the world of Chaz. By making the readings and literary guidance available in a cloud, at his convenience, he is able to continue his research unchained by the burden of proximity to facilities. He can continue his unique and original research in the most appropriate space, unshackled by temporal restraints of the very distant urban world of the university.

One might, from the comfort of a university office, lean toward romanticising Chaz's existence but this would ignore the commitment to self-directed and self-determining learning he demonstrates. As McAuliffe et al. (2008) note, a heutagogical approach requires a firm hold on process and on knowing how to learn. To succeed, Chaz demonstrated a steady commitment to critical reflection, problem-solving, and resilience. As Schunk und Zimmerman (2007) determine, such qualities and the ability to regulate one's own learning is crucial. For Chaz, his intermittent engagement to the multiple resources of the "reading dumps" is a small but essential part of his educational journey. The larger challenge is the self-efficacy and willingness to develop his own strategies to develop his research thesis.

While many aspects of distance education may be shared among postgraduate students, it is evident from the next case study that the choices and tools required can be radically different. Where Chaz prefers a reflective and often solitary approach to his studies, Jordi has come to prefer the immediacy and personal engagement

of Skype and Second Life. These two approaches to study are marked by their difference and a reminder of the multiplicity of the preferences and pathways of students.

Case Study 3: Heutagogy Through Innovative Technologies (PhD)

The following case study follows Jordi, a PhD student located in another country who has access to innovative and immersive technologies to assist in her studies and access to supervisors. Although traditional communication via email is still used, synchronous technologies such as Skype, Adobe Connect, and the use of a virtual world such as Second Life are also utilized. Through this selection of communication tools, Jordi is able to select the tool that is most suitable to her at that particular time. If she just wants to share a document, then email is the best solution (or sharing a Dropbox folder). If she wishes to demonstrate something through a drawing tool and text, then Adobe Connect is used. If she wishes to talk, she can use Skype. However, her preferred method is through the use of Second Life as she finds this more immersive and engaging. She feels like she is really there with her supervisors (Gregory und Tynan 2009). Second Life is a 3D immersive virtual world where Jordi and her supervisors meet, in a virtual space, to discuss Jordi's studies and research, through the use of avatars. Jordi animates her avatar to provide the body language that is missing in most other communication tools. She also uses lip sync so that it appears as if she is really speaking to her supervisors.

Jordi is a PhD student in her third year studying part-time (usual time to complete is six years). She lives and works in a large community in New Zealand. Jordi has access to a fast speed internet connection and a high powered computer. She has had access to some of the academics at UNE through her various online communities and decided to study in Australia with these potential supervisors. Although New Zealand has a lot to offer Jordi, she chose to study in Australia for personal reasons.

Jordi use various means to communicate with her PhD supervisors. She has tried email (asynchronous communication), Adobe Connect, Skype and Second Life (a 3D virtual world), all synchronous communication methods, although all have the ability to leave asynchronous messages.

Other than her supervisor's expertise, Jordi also has access to academics in the Australian and New Zealand Virtual Worlds Working Group (see, for example, http://www.vwwg.info) who have set up a PhD group where students (past and present) and supervisors get together on a monthly basis to discuss issues they are having and various methodologies and analysis tools. Jordi has found this invaluable because she not only has her two supervisors, but access to a plethora of other experts in the field. these include the supervisors and other higher degree research students. As the students in the group are at various stages in their candidature, it has been a great place for support both academically and personally for motivating her to keep going, even when things get tough.

Jordi has displayed independence through her journey as a PhD candidate. She interacts with her supervisors, but she also uses her initiative to interact with her peers through the Australian and New Zealand Virtual Worlds Working Group PhD group. As her peers have had similar experiences, it is easy to discuss, relate and to share. Their interactions with virtual worlds and the research journeys provide a common ground on which to discuss

issues. Jordi has also found it invaluable to gain input from other supervisors who may provide different perspectives to issues she may be facing.

Analysis

This case study offers an overview of innovative technologies used by Jordi to engage and liaise with her supervisors and peers. Jordi demonstrates a high level of self-directed learning, which is a requirement of this level of study/research. Jordi and her supervisors use a variety of technological platforms to communicate. Jordi requires her supervisors have the expertise that she has to be able to engage in this level of interaction and communication. Jordi goes beyond this to interact with other academics and peers with similar interests and experiences. She is able to glean different perspectives and continue to stay motivated through this interaction and sharing. Jordi is the epitome of a heutagogical learner.

Summary of Analyses

Across these three case studies, each student has adopted a heutagogical approach to their learning regardless of the structure of the postgraduate degree. Through a range of self-selected technologies, each student not only overcomes the many difficulties of studying online, including the tyranny of distance and isolation, but evidences the development and refinement of higher-order cognitive processes required to meet their self-determined learning needs. In each example, double-loop learning is clearly evident as the three students move beyond a linear progression model of learning, adapting their beliefs and actions as required to meet their individual learning goals.

While Kelly has undertaken a highly structured graduate certificate that is primarily "educator-centered," the students in this course have chosen a social media platform, i.e., Facebook, to move their learning beyond the "sight" of their lecturer. This decision not only puts them at the center of their own learning and learning process but also ideally moves their learning beyond the intension of the content of the unit. Through this medium, Kelly demonstrates evidence of growing self-awareness, self-regulated, and self-directed learning behaviors. These behaviors include the identification of perceived weaknesses in her learning regime. The opportunity to interact with other learners highlights for Kelly her unsophisticated approach to ask questions and the need for her to refine her declarative, procedural, and strategic knowledge and approach, including what is shared and not shared with her peers.

Not only is Chaz challenged by the high-level requirements of a research Masters degree, his journey is additionally made even more difficult by the learning environment he chooses to work within. This vignette demonstrates that Chaz's ultimate success in completing his degree rests on his ability to remain highly motivated, self-aware, and self-regulated in his learning to overcome the many self-imposed challenges his goals must endure. However, this case study also challenges the original definitions of heutagogy in which learning and education move beyond the teacher

or academic through a highly flexible and capable learner who certainly reflects an ability to adapt to his challenging environment. Without the support, flexibility, guidance, and resilience of his supervisors who are willing to meet his demanding learning regime with minimal notice, his ultimate success might not eventuate on his self-selected terms.

Finally, Jordi's vignette offers a glimpse into the future of online learning. A PhD could be considered the epitome of self-directed learning, as part of the process of enrolling in this degree requires proof of higher learning competencies and capabilities that are usually developed and demonstrated in prior degrees. Jordi uses a wide variety of technology platforms to access multiple sources of expertise beyond her own supervisors, including other academics and peers with similar interests and experiences on which she can draw. Jordi clearly reflects a highly flexible and proactive learner who is using both simple and advanced technologies to gain the knowledge and interactions her work requires for its ultimate success.

Discussion

> No man is an island, entire of itself; every man is a piece of the continent, a part of the main.
> – John Donne.

Postgraduate students undertaking their studies demonstrate how technological agency is embedded in the learner-driven process of heutagogy. These learners are not just proactive in the learning process but part of an online community of learners that includes their peers and other experts including their supervisors. While the original designers situated heutagogy as a student-centered approach in this chapter, it has been argued that online self-directed learning for postgraduate students requires higher-order cognitive processes that are enabled through the essential interaction with others.

Rather than binarizing the roles of educator and learner in regard to their participation, mapped are online landscapes as heutagogical environments across these three case studies. Whether postgraduate students leverage new critical ideas from engagement with the disciplinary communities of practice that form the basis of their studies, or connect in virtual spaces with social media or LMS communities, learning is a process of emergence through interactions with others.

Self-directed learning at the postgraduate level requires high-level cognitive competencies and capacity to learn, as these three case studies demonstrate. For example, each student faced challenging problems in their learning and through collaborations with peers and other experts including their supervisors they were able to negotiate positive outcomes through a series of higher-order cognitive processes.

These processes included critical thinking and reflection, metacognition, and self-regulation. Metacognition relies on critical reflection such as students drawing on their self-awareness, self-knowledge, and experience to perform inductive thinking and reflective judgments. However, critical thinking is only metacognitive when it is

evaluative and purposefully reflective. Practices of self-correction and advanced levels of self-awareness that contribute to a successful and appropriate solution to a problem demonstrate high-level metacognition (Tarricone 2011) as reflective in the three case-studies presented. In each case study, the interaction of self-knowledge, interaction with others, and critical reflection the necessary re-evaluation, reconsideration, and restructuring of knowledge can lead to transitional learning (see, for example, Fig. 3).

Heutagogy requires students to have a solid and firm hold on the learning process (McAuliffe et al. 2008), they must evaluate and highlight the knowledge known, and that to be known for the successful completion of their self-determined learning goals. To this, they must analytically reflect on prior knowledge, beliefs, and understandings; know where to find the information required; and then regulate the learning environment. In the online environment, the interaction with others is pivotal to this process.

Future Directions

The small qualitative study reported highlights the conceptual nuances of heutagogical practices in higher education. The authors suggest a further area for fruitful investigation could include using the dimensions outlined in Fig. 3 as a priory set of codes to investigate heutagogical practices in higher degree research teaching and learning.

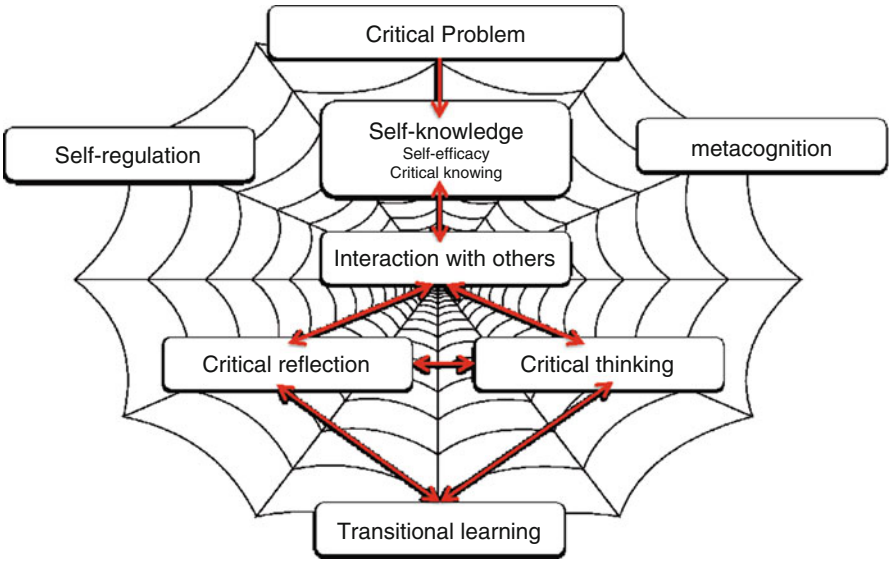

Fig. 3 Higher order cognitive processes enabled through a heutagogical approach to postgraduate online study

Particular attention could be paid to educator self-regulation and metacognition. It is our assertion that practitioners in higher education enhance their own practice when they critically evaluate and critique their ontological and philosophical beliefs and values. This scrutiny requires close examination of perspectives of the world and in particular one's declarative knowledge as knowledge about oneself and the influences on one's learning. Research becomes a generative practice of peeling back layers to consider understandings that influence practitioner decision making and have a significant flow-on impact on students.

Closer examination of heutagogical practices can enable better understandings of student. A more intensive, longitudinal look at specific experiences of a cohort of higher degree research students would furnish evidence on the dimensions alluded to in this chapter. In particular, there is scope for close scrutiny of self-regulation and professional identity development in relation to student heutagogy. Many higher degree research students enter higher education settings as established experts with competencies in their respective fields. Yet, in higher degree research work, they also take on new knowledge frameworks and embed academic literacies and procedures to cope with the demands that students regulate their own learning. They may come into academia with high levels of capability or confidence, and they are required to build and adopt skills required for academia. Further studies could shed light on these complex and contested processes.

Postgraduate study in a heutagogical framework implies that students have to be able to investigate their own beliefs in relation to those of peers, supervisors, and the structural shape of the institution. Students locate the self within academia and the broader discourses of society. Online learning requires different teaching practices to be successful, particularly at the postgraduate level. Leveraging diversity, research that targets heutagogical awareness, addresses the notion of life-long learning, an attribute associated with both a social justice and economic imperative. The impact of this chapter in its signaling of possibilities for ongoing research, capacity to inform practice and make shifts in social justice with access for a diverse student population.

Conclusion

A heutagogical approach to online learning requires the support of, and access to peers, mentors, and experts to encourage and develop the deep reflection necessary for meaningful learning. This, in turn, enables students to navigate the treacherous waters of postgraduate study, where students might otherwise find themselves isolated and lacking a community of like-minded peers. At this level of study, online students require opportunities for reflective and collaborative learning opportunities required by self-directed learning. As these case studies demonstrate, access to online social networks, virtual worlds, and technologies that can give synchronous access to supervisors when facing technology challenges are highly effective support mechanisms for the heutagogical approach to learning. All postgraduate students require the opportunity to question self-beliefs, values, and attitudes that impact on

critical and higher-order thinking, therefore access to a variety of platforms must be accessible for those students undertaking postgraduate study.

The case studies presented in this chapter add to the research that Hase and Kenyon stated in 2007 confirms the validity of heutagogy as a concept. Online postgraduate study operates within "complex adaptive systems" (115), and these students require a new level of support if they are to develop into autonomous and effective self-determined learners. Entering postgraduate study students bring with them a high level of professional and domain-based knowledge, competencies, and capabilities associated with their field of expertise. However, pursuing further study and research requires another layer of competencies such as academic skills and knowledge, while developing a level of capability or confidence that will drive and support this new knowledge as students make the necessary connections with prior knowledge to support the direction of their self-determined study. Technology enables the necessary connections with peers, experts, and mentors for collaborative learning and reflective practices that assist the development of higher-order cognitive competencies and capabilities for postgraduate students.

References

Anderson, Terry. 2010. Theories for learning with emerging technologies. In *Emerging technologies in distance education*, ed. George Velestsianos. Edmonton: Athabasca University Press.

Angelino, L.M., F.K. Williams, and D. Natvig. 2007. Strategies to engage online students and reduce attrition rates. *Journal of Educators Online* 4 (2): 1–14.

Bandura, Albert. 1997. *Self-efficacy: The exercise of control*. Vol. ix. New York: W H Freeman/Times Books/Henry Holt & Co.

Bannister-Tyrrell, Michelle, Susan Smith, Peter Merrotsy, and Linley Cornish. 2014. Taming a 'many-headed monster': Tarricone's taxonomy of metacognition. *TalentEd* 28 (1/2): 1–12.

Blaschke, L.M. 2012. Heutagogy and lifelong learning: A review of Heutagogical practice and self-determined learning. *The International Review of Research in Open and Distance Learning* 13 (1): 56.

Blaschke, L.M. 2014. Using social media to engage and develop the online learner in self-determined learning. *Research in Learning Technology* 22: 21635.

Cochrane, Thomas, Laurent Antonczak, Averill Gordon, Helen Sissons, and Andrew Withell. 2012. Heutagogy and mobile social media: Post web 2.0 pedagogy. In *Proceedings Ascilite wellington 2012: Future challenges, sustainable futures*, ed. Brown Mark, M. Hartnett, and Sarah Stewart, 204–214. Wellington: Massey University and ascilite.

Collins English Dictionary, 5th Edition. 2016. "Agogy definition." *Revers – HarperCollins Publishers 5th Edition*. http://dictionary.reverso.net/english-definition/agogy.

Dirkx, J., and J. Mezirow. 2006. Musings and reflections on the meaning, context and process of transformative learning. *Journal of Transformative Learning* 4 (2): 123–139.

Downes, Stephen. 2010. New technology supporting informal learning. *Journal of Emerging Technologies in Web Intelligence* 2 (1): 27–33.

Facebook, Inc. 2016. "Facebook reports fourth quarter and full year 2015 results." *Investor Relations*. 27 Jan. https://investor.fb.com/investor-news/press-release-details/2016/Facebook-Reports-Fourth-Quarter-and-Full-Year-2015-Results/default.aspx.

Gale, Trevor, and Stephen Parker. 2014. Navigating change: A typology of student transition in higher education – DRO. *Studies in Higher Education* 39 (5): 734–753. https://doi.org/10.1080/03075079.2012.721351.

Garrison, D.R. 2007. Online Community of inquiry review: Social, cognitive, and teaching presence issues. [Report]. *Journal of Asynchronous Learning Networks* 11 (1): 61–72.

Goodband, John Hallam, Yvette Solomon, Peter Charles Samuels, Duncan Lawson, and Roy Bhakta. 2012. Limits and potentials of social networking in academia: Case study of the evolution of a mathematics Facebook Community. *Learning, Media and Technology* 37 (3): 236–252. https://doi.org/10.1080/17439884.2011.587435.

Gregory, Sue, and Belinda Tynan, B. 2009. Introducing Jass Easterman: My Second Life learning space. In R. Atkinson & A. McBeath (Eds.), Same Places, Different Spaces. Proceedings ascilite Auckland 2009 (pp. 377–386). Auckland, New Zealand: The University of Auckland, Auckland University of Technology, and ascilite. http://www.ascilite.org.au/conferences/auckland09/procs/gregory.pdf.

Hase, Stewart, and Chris Kenyon. 2001. From andragogy to heutagogy. http://www.psy.gla.ac.uk/~steve/pr/Heutagogy.html.

Hase, Stewart, and Chris Kenyon. 2007. Heutagogy: A child of complexity theory. *International Journal of Complexity and Education* 4 (1): 111–118.

Hou, Huei-Tse, Shu-Ming Wang, Peng-Chun Lin, and Kuo-En Chang. 2015. Exploring the Learner's knowledge construction and cognitive patterns of different asynchronous platforms: Comparison of an online discussion forum and Facebook. *Innovations in Education and Teaching International* 52 (6): 610–620. https://doi.org/10.1080/14703297.2013.847381.

Jakobsdottir, Solveig, Lindy McKeown, and Debra Hoven. 2010. Using the new information and communication Technologies for the Continuing Professional Development of teachers through open and distance learning. In *Teacher education through open and distance learning*, ed. Patrick Alan Danaher and Abdurrahman Umar, 105–120. Vancouver: Commonwealth of Learning. http://www.col.org/resources/publications/Pages/detail.aspx?PID=332#.

Johnson, R. Burke, and Larry B. Christensen. 2010. *Educational research: Quantitative, qualitative, and mixed approaches*. 4th ed. Thousand Oaks: SAGE Publications.

Kanuka, Heather, and K. Jugdev. 2006. Distance education MBA students: An investigation into the use of an orientation course to address academic and social integration issues. *Open Learning* 21 (2): 153–166.

Knowles, Malcolm. 1970. *The modern practice of adult education: From pedagogy to andragogy.* New York: Cambridge: The Adult Education Company. http://www.umsl.edu/~henschkej/articles/a_The_%20Modern_Practice_of_Adult_Education.pdf.

Knowles, M. 1975. Self-directed learning: A guide for teachers and learners. Chicago, IL: Follett.

Magogwe, Joel M., Beauty Ntereke, and Keith R. Phetlhe. 2015. Facebook and classroom group work: A trial study involving university of Botswana advanced oral presentation students. *British Journal of Educational Technology* 46 (6): 1312–1323. https://doi.org/10.1111/bjet.12204.

McAuliffe, Marisha B., Douglas J. Hargreaves, Abigail J. Winter, and Gary Chadwick. 2008. Does pedagogy still rule? In *Proceedings of the 19th annual conference of the Australasian Association for Engineering Education: To industry and beyond*, 367–372. Yeppoon: Central Queensland University/Australasian Association for Engineer Education. http://search.informit.com.au/documentSummary;dn=314972727762633;res=IELENG.

McWhorter, Rochell, and A. Julia Delello. 2015. Green computing through virtual learning environments: Educational IS&T Book Chapter | IGI Global. In *Handbook of research on innovative technology integration in higher education*, ed. Frederick Muyia Nafukho and J. Beverly Irby, vol. 28. Hershey: IGI Global: Disseminator of Knowledge. https://doi.org/10.4018/978-1-4666-8170-5.ch001.

Merriam, Sharan B. 1998. *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco: Jossey-Bass Publishers.

Parks, Malcolm R. 2011. "Social network sites as virtual communities." In A Networked Self: Identify, community, and culture on social network sites, Zizi Papacharissi, 105–123. New York: Routledge Taylor & Francis Group. http://viralmedia.pbworks.com/w/file/fetch/45

052678/A%20Networked%20Self-Identity,%20Community%20and%20Culture%20on%20Social%20Network%20Sites%202011.pdf.

Schunk, Dale H., and Barry J. Zimmerman. 2007. Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly* 23 (1): 7–25.

Smith, Louis M. 1978. An evolving logic of participant observation, educational ethnography, and other case studies. *Review of Research in Education* 6: 316–377. https://doi.org/10.2307/1167249.

Somerville, M. 2007. Postmodern emergence. *International Journal of Qualitative Studies in Education* 20 (2): 225–243.

Somerville, Margaret J. 2008. 'Waiting in the chaotic place of unknowing': Articulating postmodern emergence. *International Journal of Qualitative Studies in Education* 21 (3): 209–220. https://doi.org/10.1080/09518390801998353.

Stake, Robert E. 1995. *The art of case study research*. Thousand Oaks: SAGE.

Synnott, Michael. 2013. Reflection and double loop learning the case of HS2. *Teaching Public Administration* 31 (1): 124–134. https://doi.org/10.1177/0144739413479950.

Tarricone, Pina. 2011. *The taxonomy of metacognition*. Hove: Psychology Press/Taylor & Francis Group. https://works.bepress.com/pina_tarricone/11/.

Teichler, Ulrich. 1998. Massification: A challenge for institutions of higher education. *Tertiary Education and Management* 4 (1): 17–27. https://doi.org/10.1007/BF02679393.

University of New England. 2016. Home. Accessed 14 June. http://www.une.edu.au/home.

VanDoorn, George, and Antoinette A. Eklund. 2013. Face to Facebook: Social media and the learning and teaching potential of symmetrical, Sychronous communication. *Journal of University Teaching & Learning Practice* 10 (1/6): 1–14.

Wenger-Trayner, Etienne, and B. Wenger-Trayner. 2015. Communities of practice and social learning systems. http://wenger-trayner.com/introduction-to-communities-of-practice/.

Whittaker, Alexandra L., Gordon S. Howarth, and Kerry A. Lymn. 2014. Evaluation of Facebook© to create an online learning Community in an Undergraduate Animal Science Class. *Educational Media International* 51 (2): 135–145. https://doi.org/10.1080/09523987.2014.924664.

Wiegand, Greg, ed. 2009. Cloud computing: Web-based applications that change the way you work and collaborate online. Que Publishing. http://ptgmedia.pearsoncmg.com/images/9780789738035/samplepages/0789738031_Sample.pdf.

Yang, Haibo, and Mary Tate. 2012. A descriptive literature review and classification of cloud computing research. *Communications of the Association for Information Systems* 31 (1): 35. http://aisel.aisnet.org/cais/vol31/iss1/2.

Yilmaz, Fatma Gizem, and Hafize Keser. 2016. The impact of reflective thinking activities in E-learning: A critical review of the empirical research. *Computers & Education* 95: 163–173. https://doi.org/10.1016/j.compedu.2016.01.006.

Zimmerman, Barry J. 1995. Self-regulation involves more than metacognition: A social cognitive perspective. *Educational Psychologist* 30 (4): 217–221. https://doi.org/10.1207/s15326985ep3004_8.

Research on the Inside: Overcoming Obstacles to Completing a Postgraduate Degree in Prison

12

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Abstract

Postgraduate students who are attempting to complete their study while being incarcerated face a unique set of administrative, social, and academic challenges which can significantly impact their progress. University educators are very often unaware of the particular circumstances of these incarcerated postgraduate students and fail to provide adequate support. As prisons are designed with the purpose of maintaining public security, they generally are inadequate learning environments and are staffed by officers with little familiarity with university processes and academic demands.

This chapter describes the very specific research and learning environment of a prison and details how the prison culture can support or inhibit higher-level learning. It highlights the significant benefits of higher education for incarcerated students, prisons, universities, and society as a whole. However, the chapter also explores the many difficulties of access and support for any form of higher education in the prison environment; and specifically, the difficulties for postgraduate students undertaking research and for their supervisors.

The chapter concludes with a series of recommendations for both universities and prisons, suggesting that many of the challenges to postgraduate teaching and learning in prison can be at least partially addressed through better communication, a whole-of-prison approach to learning and the development of a learning culture. Prison conditions vary hugely across jurisdictions, and so it is not possible to provide a model for study which works for all incarcerated students but this chapter suggests changes which could improve conditions for many.

Keywords

Prisoner education · Prison education · Higher education · Postgraduate education · Digital equity · Cultural capital

Introduction

As the authors of this chapter, we have worked extensively in prisons in Australia and the UK, usually researching, supporting, or instigating higher education initiatives. Much of the information contained herein comes from our personal observations and conversations with prisoners, prison officers and academics, in the absence of research literature or formal research projects on postgraduate research in prisons.

It is very difficult to determine how many prisoners are undertaking formal postgraduate research in Australian or UK prisons. This data is not specifically collected; instead it is captured under the umbrella of the percentage of eligible prisoners engaged in higher education which fails to differentiate between prisoners engaged in university enabling courses, undergraduate courses, coursework higher degrees, and research higher degrees (e.g., see Australian Government Productivity Commission 2017). Even so, the numbers of postgraduate students are likely to be small. By way of example, the UK's Open University has been a key provider of higher education to prisoners since the 1970s but they currently have only 11 postgraduate students across 9 prisons in England. There are, however, growing numbers of other UK universities providing higher-level learning opportunities through Prison University Partnerships where groups of students from the university learn together with a group of incarcerated students (see Prisoners' Education Trust 2017). Some of these universities are building on their partnerships and beginning to offer postgraduate study to incarcerated students. In Australia, a number of universities have enrolled a handful of incarcerated postgraduate students but again, this data is not specifically collected. Our knowledge of incarcerated postgraduate students usually comes about from conversations with academics and prison education officers.

If prisoners are undertaking research higher degrees while incarcerated, it is almost certainly due to the efforts of individual champions within the prison system, within the university and among the student's family and friends. These champions act as intermediaries between the university or prison and the student, secure resources and in some cases undertake the mechanical aspects of the research. This in turn raises ethical issues within the university, creating issues around authorship and original research. There are no systematized and supported pathways for incarcerated students to enter into research higher degrees in either Australia or the UK. Anecdotally, we would say that there are slightly more incarcerated students doing coursework postgraduate diploma and master's degrees, typically MBAs. But again, the pathways are not formally supported.

More than immobilizing and isolating a prisoner or "offender" for the duration of his or her sentence, incarceration also changes that person's life chances and identity choices in perpetuity. More broadly, the criminal justice systems in Australia and the UK do more than "correct" criminals; they often disproportionately capture a particular segment of the population, specifically those who are already disadvantaged and most likely to suffer from institutional racism, systemic bias, and social injustice (Hopkins et al. in press; Department for Works and Pensions 2012). Once within the prison, these prisoners are far less likely to participate in educational programs and when they do

engage, they are more likely to participate in low-level numeracy and literacy programs rather than in higher education of any sort. For example, Aboriginal and Torres Strait Islander Australians make up just 2% of the general population and some 28% of Australia's prison population. Generally speaking, they also have had less contact with formal education prior to incarceration (Lee et al. 2017).

Prisoners are routinely subject to assumptions which would be considered discriminatory if applied to other student populations. For example, despite rigorous research to the contrary (Coates 2016), assumptions are made that prisoners need only basic skills development and vocational training, rather than higher education. This leads to a lack of provision with only 1% of the funded curriculum in UK prisons being at a higher, postsecondary level (Prisoners' Education Trust 2012). Such prejudicial assumptions, which reflect the populist, erroneous stereotype that criminals are of lesser intelligence, tend to reduce motivation, aspiration, and confidence in incarcerated university students, or potential students (Harmes et al in press). However, in this chapter we will provide many reasons why higher education for prisoners is important, discuss the challenges faced in facilitating higher education and, in particular, postgraduate study in prison, and consider what could be done to improve the situation.

The Case for University Studies in Prison

The deprivation of liberty is the punishment for a prisoner but all other human rights should remain intact. A basic principle should be that prisoners are treated with humanity and with respect for the inherent dignity of the person (Arnold 2012; United Nations 2009). Under international human rights law, including the International Covenant on Economic Social and Cultural Rights and the Universal Declaration of Human Rights, prisoners have the same rights to education as free citizens. In reality, however, prison management frequently prioritizes security, work, and economic efficiency to the detriment of educational opportunity (Harmes et al. in press; Pike and Adams 2012).

So, the obvious argument in support of university prison education is that of equity. It can be argued that prisoners should have access to the same level of educational opportunities available to adults in wider society. However, there is a strong case for going beyond simple parity. All too often prisoners have failed or been unable to take advantage of the educational opportunities offered earlier in life. They often arrive in prison with no qualifications but can use their time constructively. Arguably, society has both an obligation and self-interest in looking to mitigate the adverse effects of imprisonment and assist prisoners to be well-equipped to reenter society on release and empower them to contribute fully and constructively to it (Clark 2016; Coates 2016).

Literacy and numeracy are clearly important for those that lack such skills, but the evidence suggests that inspiring aspiration and motivation are key. Education could embed learning of literacy, numeracy, and basic ICT skills into other more creative activities that prisoners are inspired and motivated to take up (Clark 2016). Once

motivated, prisoners can excel at their studies, rising to higher levels quickly if well-supported and allowed to progress as far as they are able (Pike and Hopkins in press). Learning should address deeper personal and social development needs (essential for social integration and gaining employment) rather than simply focusing on job skills relating to any specific employment route (Clark 2016). This is especially true when considering that the chances of an ex-offender gaining employment post-release are significantly less than for an individual of the same age and educational level who has not been previously incarcerated (Visher et al. 2011). The reality is that many of these ex-offenders will not be employed and this is especially true of former sex offenders (Brown et al. 2007).

Yet, in both Australia and the UK, only around 1.5% of eligible prisoners access higher education (Australian Government Productivity Commission 2017; Coates 2016; House of Commons Library 2017). This varies significantly across prisons in the UK and across states and territories in Australia. For example, around 6.2% of eligible Queensland prisoners access higher education (Australian Government Productivity Commission 2017). Until very recently, correctional centers in some states were unable to facilitate prisoner enrolment in tertiary programs and prisoners in the Northern Territory had access to neither the technology nor the support that would enable them to participate in higher education (Farley and Willems 2017). In the UK, higher education in prison is provided mostly through distance learning and applications for funding for distance learning is a good indicator of the levels of higher education in each prison. Applications for funding in 2014–15 ranged from 0% to 14% of the UK prison populations (Clark 2016).

Reducing the Damage from Incarceration

Prison is damaging and almost invariably, lives are more fractured upon release than on entry. This is true almost irrespective of the design of the facilities and the programs that are offered. Education is said to lessen the damage caused by imprisonment (Costelloe 2014). Higher education, in particular, develops prisoners' abilities to critically reflect on their situation, enabling them to have different conversations, develop new horizons and partition themselves from the more damaging effects of prison (Behan 2014; Pike 2014). Higher education students in prison often have a sense of belonging to a learning community which can partially protect them from the isolation of being in prison. It can also help them to stay away from the more damaging aspects of prison life and from belonging to a criminal community (Pike and Hopkins in press).

Ex-prisoners with "spoiled" pasts have significant difficulty in gaining employment upon release (Farrall et al. 2010). People with convictions are highly likely to be excluded by employers, with 75% of employers using a disclosed conviction to reject an applicant or discriminate against them (Working Links' 2010). However, there is evidence that higher education can enhance a prisoner's employment prospects and rates of pay in employment, upon release (Costelloe 2014; Duwe and Clark 2014; Nally et al. 2014).

Empowerment, Agency, and Sense of Self

In a prison, perhaps more than in any other educational context, identity matters and identity investments will ultimately determine study success or failure. As the ultimate "total institution" (see Goffman 1961), the modern prison requires of its inhabitants a working and reworking of personal and social identities (Harmes et al. in press). As Pike and Adams (2012) pointed out in their study of higher-level distance learners in UK prisons, prisoners frequently value the identity of "student" as a "lifeline." Incarcerated students work hard to establish and protect this valued identity against competing interpretations of who they are as "offenders."

The acquisition of knowledge brings with it empowerment, improved self-esteem and a greater capacity to navigate life's options (McCollom 1994). Education that is voluntary provides prisoners with agency, giving them the ability to take control of this aspect of their lives while, of its nature, a prison is an environment in which prisoners are necessarily disempowered from having authority or control (Clark 2016; Crewe et al. 2014). This can be transformative, involving a shift in one's sense of self, and the emergence of a prosocial identity with prosocial attitudes, values, and beliefs. Accompanying this is an investment in, and attachment to, conventional roles and law-abiding behaviors.

Students learn to become analytical readers, writers, and thinkers. They identify themselves as something other than criminals; they are students. They have the opportunity to interact with and be seen by people from the outside as something other than criminals and envision a different life for themselves than the one of crime (McCarty 2006). Being given responsibilities and belonging to a learning community in prison helps students to maintain their student identity and self-esteem and increases the likelihood of success (Pike and McFarlane 2017).

Resilience, Hope, and Reintegration into Society

Studying higher education in prison comes with many challenges. Successfully completing higher education in prison, against the odds, builds realistic hopes and aspirations for prisoners to have better lives upon release. By overcoming the challenges and ultimately succeeding in their studies, students develop a resilience which enables them to continue to overcome the immense challenges they face post-release (Clark 2016; Pike and Hopkins in press).

Higher education can be a form of collateral that can be used as currency to negotiate the stigma commonly experienced by former prisoners in the "conventional world" (Darke and Aresti 2016). For many former prisoners, higher education is the gateway back into "conventional society" by allowing them to develop social capital and preparing them for active citizenship (Costelloe 2014). Relative to this, and equally important, higher education provides an alternative way of "being," giving new meaning and value to the lives of prisoners and former prisoners. For most of these men and women, life has not only become much more meaningful, it has had significant implications for their psychological well-being (Darke and Aresti

2016). Former prisoners who have studied higher education in prison were found to reintegrate back into society more successfully if they were able to maintain their student identity and keep their hope and aspirations alive through belonging to a learning community post-release (Pike and McFarlane 2017).

Reducing Reoffending

The success of education and training programs in prisons is usually couched in terms of reductions in reoffending. This is especially problematic given there is no agreed definition of what rates of reoffending mean between jurisdictions and rates are measured over a period of years (Andersen and Skardhamar 2015), and other factors aside from education, including police activity, significantly impact an individual's inclination to reoffend (Dempsey 2013). This uncertainty around the definition of recidivism means that this measure is frequently manipulated to reinforce whatever argument is being proposed (Andersen and Skardhamar 2015). However, if using this measure, there is much research evidence that higher education reduces reoffending, giving results between 8% and 55% reduction in reoffending (Clark 2016; McCarty 2006; Ministry of Justice 2013).

In Australia, the cost of housing a prisoner is around A$105,000 per annum (Australian Government Productivity Commission 2017). Even a small reduction in recidivism rates translates into significant savings to the public purse.

The Development of Higher Cognitive Skills and "Dynamic Security"

It is theorized that improvements in cognitive processing, communication abilities and enhancement of long-term prospects afforded by education and training for prisoners may result in prosocial behaviors with a subsequent reduction in the frequency and severity of assaults. Using education to improve security outcomes contributes to "dynamic security," that is, security mediated by human factors (Wynne 2001). Early studies revealed the potential for correctional education programs to create positive institutional cultures. These changes were thought to be brought about by prisoner exposure to positive civilian role models (educators) through improved decision-making abilities and prosocial values (Brazzell et al. 2009). Correctional center management have encouraged prisoner enrolment in basic education because it provides an incentive for good behavior; producing mature, well-spoken prisoners who have a calming influence on other prisoners and on correctional officers (Ross 2009).

Higher education takes this a step further. It increases cognitive ability, broadening and developing a way to consider problems and issues, providing new prosocial thinking patterns, and giving prisoners the ability to express themselves more effectively and negotiate agreed outcomes without having to resort to violence (Clark 2016; Farley and Pike 2016; Pompoco et al. 2017).

Finally, educational research shows how people's mindsets influence their capacity to learn and change. Mindsets are, in turn, influenced by surroundings. Where

potential is recognized to be malleable and there are opportunities for growth, people are more likely to be able to change in the desired direction (Armstrong and Ludlow 2016). So, clearly, higher education provides higher cognitive skills and safer prison environments for both prisoners and staff.

The Challenges for Prisoners Engaged in Higher Education

Prisoners who wish to access higher education experience many challenges. These arise mostly due to the harsh prison regime with the lack of provision of resources and technology, lack of access to online materials, a lack of flexibility in timing of studies and the lack of a learning culture. This position is exacerbated by the lack of educational and social prerequisites and a lack of local support. Furthermore, at a policy level, there is a conflict between the rhetoric for education as a human right or to reduce recidivism, and the global recession, financial cutbacks and moral panic about crime (Czerniawski 2015).

The Prison Environment

Prison provides a very specific learning context. On entering, prisoners lose their home, their possessions, and their very identity as a person, becoming just a number (Goffman 1961). The contemporary prison has become increasingly formulated, concerned, and perhaps obsessed with negative conceptions of risk (Warr 2016). Prisons are closed institutions in which control is the primary concern and questioning authority is not tolerated. In academia, colleges and universities are theoretically open places that encourage questioning. Operating a college inside a tightly closed institution where carceral security always has primacy requires adaptation (McCarty 2006).

Prisons are noisy, crowded and sometimes hostile environments where students are subject to movement restrictions and transfers, often without warning (Hopkins and Farley 2015). Movement issues are becoming increasingly common as prisons become more and more overcrowded. Prisoners from different security classifications are not permitted to meet due to concerns around the passage of contraband or because of individual security concerns. Nearly every prison in Australia and the UK has some degree of overcrowding (Australian Government Productivity Commission 2017).

Access to Technology

The increased prevalence and sophistication of digital technologies and the Internet from the 1980s opened the doors for potentially greater opportunity for participation in higher education (Selwyn 2010). Electronic access to course materials and course activities enables many students, otherwise unable to participate in face-to-face activities on campus, to participate in higher education. This digital access is often heralded as the

way in which higher education institutions could enable participation by large numbers of students from nontraditional cohorts (Selwyn and Gorard 2003; Sims et al. 2008).

There is now a fundamental assumption that people should have empowered and informed choices in how they access or use technology for learning, which is just not the case in a prison context (Pike and Adams 2012). Although prisons vary significantly in what technology they do provide for learning, students in prison will rarely have any choice about how they access their resources, but particularly access to high-end technologies (Baker 2003). Almost without exception, prisoners are not allowed to access learning technologies in their cells. An Australian project, Making the Connection, is providing access to in-cell notebook computers for a selection of higher education programs in Queensland, Tasmania, Western Australia, and the Northern Territory. However, none of the programs are at a postgraduate level (Farley 2017).

In some jurisdictions, prisoners have access to computer labs where eight or ten computers are networked to an isolated server. Hardware and software are typically out of date and poorly maintained. In the Australian Capital Territory, prisoners have access to in-cell computers running on a Linux platform. Certain websites are whitelisted, that is, can be accessed by prisoners but the degree of access is not sufficient for prisoners to undertake university study. This same system does allow limited e-mails to five e-mail addresses. This enables parents or partners to access materials on behalf of the incarcerated student (Farley and Willems 2017).

In the UK, most prisons' education departments have at least one computer suite with 10 to 12 computers but these are often inaccessible to higher education students who are outside of the basic education provision (Pike and Adams 2012). Also, despite significant upgrades of technologies in many prisons, prisoners report that IT facilities are often limited or outdated. This has a number of implications for studying, for example coursework has to be handwritten, which is particularly problematic as a growing number of modules in degree programs require computer-based work (Darke and Aresti 2016).

Internet Access

In our so-called connected, digital, "information society" or "network society" (see Castells 1996, 2004), prisoners are one minority group that remains almost entirely disconnected and outside the digital network. The vast majority of Australian or UK prisoners have no direct access to Internet-enabled computers, despite the fact that this digital disconnection puts them at a serious disadvantage when attempting to complete distance education courses in the age of the digital university (Harmes et al. in press; Pike and Adams 2012).

The increasing reliance on digital technology for teaching and learning in higher education presupposes ubiquitous connectivity, that is, a reliance on the Internet (Farley and Willems 2017). While contemporary prisons aim, in theory at least, to rehabilitate rather than punish, the overriding focus on security, on protecting victims, and on public safety means that most incarcerated students are disconnected from online learning (Harmes et al. in press).

Lack of access to the Internet means lack of access to online learning technologies, lack of access to fully online material, and lack of access to online interactive formative assessment or any of the support mechanisms normally available to students online (Farley and Doyle 2014). Universities spend a lot of time and money to provide offline alternatives to their students in prison and some universities are beginning to desert this cohort due to the difficulties and high costs associated with provisioning them with access to higher education (Farley and Willems 2017).

A lack of Internet access is a particular problem for prisoners doing research higher degrees, as the Internet is critical for research-based activities and makes research and communicating with tutors and supervisors extremely difficult (Arnold 2012). This lack of Internet access has also become increasingly problematic due to an increasing trend toward online delivery of courses and tutorials, especially distance-learning courses. This limits the courses prisoners can do or the support they can get (Darke and Aresti 2016). The Open University has developed a "walled garden," a secure copy of its Virtual Learning Environment, for use with its students in secure environments. This provides direct access to some of its more popular online modules and there are plans to supply prisons with a selection of award-winning, free, Open Educational Resources on OpenLearn (see Open University 2017). However, access to the "walled garden" is dependent on the prisons' limited and outdated facilities and, despite significant efforts, progress has been slow (Farley and Pike 2016).

As a result of the prisons' inability to become digital, incarcerated students are in danger of falling through the digital gap between those who benefit from new technologies of learning, communication, and networking, and those who are left behind. Moreover, the systematic lack of direct access to the Internet for educational purposes, experienced by incarcerated students and maintained by Australian and UK corrections policy and practice, would be considered discriminatory or unjust treatment, if so consistently applied to other student populations. The denial of Internet access, which undermines educational and employment opportunities, compounds social and economic marginalization for the prisoner or former prisoner. Hence, Internet deprivation becomes another form of exclusion, which the already excluded "other" must bear, in the interests of social stratification (Harmes et al. in press; Pike and Adams 2012; Czerniawski 2015).

Competition with Paid Work

In most correctional jurisdictions, prisoners are obligated to undertake paid work, often at a fraction of the numeration that such work would attract outside of prison. From this meagre income, prisoners must buy toiletries and other personal necessities (Arnold 2012). It depends on the correctional jurisdiction as to whether study can be considered to be work and is renumerated. Very often prisoners are studying around their regular paid work.

Pike and Adams (2012) make the distinction between the "working" and the "learning" prison as two ends of a spectrum of UK prison culture, suggesting that a "working" prison has a "strict working environment which does not allow space, time or technology for independent learning" (Pike and Adams 2012: 369). This may

be particularly noticeable in private prisons and the increasing privatization of prisons (Andrew 2007) means that more and more students find themselves on strict working schedules without adequate study time (Hopkins 2015). Space too is restricted, since study spaces, such as libraries or education department classrooms, are usually only available during the working day (Pike and Hopkins in press).

Disruptive Environment

Correctional centers are challenging learning environments, even for the most committed student. By their very nature, they are stressful, noisy, disorientating, and depressing environments (Torre and Fine 2005). Prisoners are at the mercy of the "structured day," a system that ensures that prisoners' movements and activities are tightly controlled. Prisoners must always be attentive to the loudspeaker and direction from custodial officers or risk breaking the rules. This greatly impedes their ability to pay attention during their studies (Arnold 2012).

Prison security is privileged over everything else in the prison, and education comes very low on the prison management's priority list. This means that study sessions are constantly interrupted, cancelled or changed at short notice. Students may also be transferred to another prison, or even released without prior warning, which could mean that students lose their work and their resources (Pike 2014).

Skyrocketing imprisonment rates have led to overcrowding in every Australian and UK jurisdiction (Criminal Justice Alliance 2012; Australian Government Productivity Commission 2017), resulting in two or three prisoners sharing cells that are designed to house one person (Mackay 2015). This can be difficult for the prisoner who wants to study as there is distraction from cellmates who want to talk, listen to music or watch television. In addition, institutional "norms" such as daily lockdowns, cell searches, and head counts cause frequent disruptions (Hopkins and Farley 2015). Security restrictions, cultural constraints, and inconsistent staffing may prevent students from accessing education centers, resources, and support (Lee et al. 2017).

Some students feel that prisons, and some corrections officers, are hostile or indifferent to their attempts to undertake and complete higher education (Darke and Aresti 2016). Overcrowding and financial cutbacks affecting staffing levels have only exacerbated the situation, making motivation particularly challenging for many students (Harmes et al. in press; Pike and Hopkins in press).

Financial Constraints

Incarcerated students also complain about financial constraints to further study – a common problem for low socioeconomic background students which is exacerbated by the constraints of the prison environment. It is important to keep in mind that phone calls, supplementary food items, hygiene products, and textbooks must often be purchased from the limited funds prisoners earn while within the institution. Moreover, most do not have family members with the motivation and means to pay for expensive textbooks (Harmes et al. in press).

Lack of Educational and Social Prerequisites

In the UK, some 47% of prisoners report having no qualifications compared with 15% of the general adult population (Clark 2016). Similarly, 42% report having been permanently excluded from school; 21% report needing help with reading, writing or numeracy (Clark 2016). Illiteracy rates are far higher in prison populations compared with the general (non-incarcerated) population, and over 30% of inmates do not have a high-school diploma or equivalency degree (Pompoco et al. 2017).

In addition, most prisoners lack social and cultural capital. They usually have no experience of a university setting and have experienced very little educational success. They are very often first in family to attend university, let alone to undertake postgraduate study (Arnold 2012; Baker 2003). For those prisoners who are from non-English-speaking backgrounds the problems are exacerbated, with language issues, worries about deportation status and cultural shock (Arnold 2012). Such prisoners require much support to begin and maintain their studies.

However, lack of educational attainment does not equate to lack of intelligence and, given the right opportunities and support, prisoners can rise from illiteracy to degree level in a surprisingly short time (Pike and Hopkins in press). It is learners' positive expectations for themselves, and an encouraging educational climate which enables them to overcome obstacles to learning, which are the most powerful agents for educational participation and achievement (Abbott-Chapman 1994).

Challenges for Universities

Universities have an institutional obligation to ensure postgraduate students are exposed to a research culture but providing such an exposure within a prison environment holds many challenges. University personnel at all levels do not fully understand the restrictions imposed by the prison environment. Invariably, the organizers of the research are not familiar with the prison context and are not sufficiently aware of the difficulties for students and staff. For example, there is a common misunderstanding that prisoners have unlimited time for study and have access to adequate resources but as shown earlier in this chapter, this is often not the case. Initial decisions to admit prisoners onto postgraduate programs are therefore often made without the pertinent facts. Educators may fail to take into account the disruptive prison environment, lack of suitable study space, lack of technologies, and the potential distractions and transfers. With insufficient time and effort put into planning the students' research, study plans may not be sufficiently flexible to deal with the unpredictability of prison study (Prison-based postgraduate students 2017).

There is often a lack of communication between prisons and universities. Security concerns dictate that written or electronic communication between university staff and their prison student is normally directed through an intermediary in the prison. Thus, universities are invariably at the mercy of prison staff who are increasingly likely to be supporting higher education on top of another demanding full-time role (Pike and Hopkins in press).

Particular Challenges for Prisoners Undertaking Postgraduate Research

Incarcerated students often feel discriminated against, unsupported or marginalized in their attempts to obtain a research higher degree; these feelings directed to both the prison and the education provider. These feelings arise despite good intentions and university-led initiatives. Moreover, these feelings of anger and frustration that arise from perceptions of unfair treatment and unequal access to education staff, educational technologies, and educational opportunities can lead to incarcerated students dropping out or falling back into negative coping strategies (Harmes et al. in press). However, the benefits of postgraduate study for the incarcerated student can give them tremendous perseverance and they may go to extraordinary lengths in order to succeed: "It broadens the mind, opens up new avenues and gives one a confidence that can only come from discovering a whole new beautiful world of hope and opportunity" (Prison-based postgraduate students 2017).

Poor Access to Research Libraries

Unlike colleges and universities on the outside, prisons do not have extensive academic libraries (McCarty 2006). Prison libraries are generally very poor, often relying on donations with books so heavily vetted that many simply do not make it to the library shelves. Prisoners are not able to browse relevant publications either physically at a university campus or via an online catalog. They do not get to feel the ambience of a university library and feel "the force and power of the intellect both within themselves and within the academy" (Arnold 2012: 945). The librarians often try hard to supply interlibrary loans or other requested material but are hampered by security concerns and slow prison post (Pike 2014).

Even if the library does offer enough material for prisoners to complete original research papers, there is no guarantee that prisoners have access to the library. As stated earlier, prisoners often work 35 to 40 hours per week which often coincide with prison library hours (McCarty 2006; Pike 2014). Not only does this lack of access hamper research but it also makes it very difficult for the students to situate their own research within the wider literature.

Poor Access to Supervisors

Prisoners cannot just pick up the phone to talk to supervisors or drop them an e-mail to clarify an issue (Arnold 2012; Prison-based postgraduate students 2017). Education officers (if the prison has them; not all jurisdictions do) act as the intermediary between the supervisor and the prisoner, sometimes providing e-mail and telephone contact. At some universities, such as the University of Southern Queensland, there is a formal document which empowers the education officer to deal with the university on behalf of the prisoner. However, communication between the

incarcerated student and their supervisor in the university often relies on post which, with security checks of contents, can take weeks.

Some educators are wary of going "behind the wire" at correctional centers either due to fears for their own safety and/or because of prejudice against prisoners ("they are in there for a reason") (Warner 1998). Those supervisors or tutors who do wish to visit their students may only be able to visit once or twice a year due to security restrictions and the time it takes to organize the permissions for each visit. In a country such as Australia, where students may be separated from their supervisors by many thousands of kilometers, students may never see their supervisors and are totally reliant on alternative forms of communication.

No Access to Other Candidates

Social interactions and social networks are important for coping with postgraduate study; however, they too are problematic for incarcerated students. As Karimshah et al. (2013) have suggested, social factors are particularly important for the retention of low socio-economic status university students facing significant adversity. For incarcerated students, such disadvantages related to race and class positioning are frequently exacerbated further by the environment itself, which by its very nature is isolationist and prevents freedom of association. Even upon release, former prisoners are often lacking in cultural and social "capital" (see Bourdieu 1985), with fewer opportunities to build mutually beneficial interpersonal relationships and social networks in the "straight" world (Harmes et al. in press).

Due to their isolated circumstances, prisoners usually have no access to other postgraduates through discussion fora or through PhD colloquia or conferences (Arnold 2012). Even if there were other postgraduate students in their prison, incarcerated students often have very little or no contact with each other and are not able to leverage the social learning supports that are available to students engaged in online courses (Lee et al. 2017).

Communication is easier when there are good learning communities within the prison, such as in a "learning" prison with dedicated learning spaces where students can build a rapport with other like-minded students within the prison. Such spaces can also support peer-tuition which is beneficial for all concerned (Pike and Adams 2012). Some UK prisons also have good Prison-University Partnerships where incarcerated students and non-prison students can learn together for a short time. These communities, though possibly short-lived, allow incarcerated students to have academic conversations with their "outside" peers (Armstrong and Ludlow 2016).

Public Perception

It is important to remember that what happens inside the prison, perhaps even more so than inside other institutions, is defined and delimited by the wider political and social context. In particular, prison education will be shaped by a shifting economic climate,

a punitive culture, and the rising tide of neoliberalism in society and politics (Harmes et al. in press). The general public is very often opposed to the higher education of prisoners, although it is least tolerant of postgraduate study, even for those serving long sentences (McCollom 1994). In response, correctional jurisdictions may be reluctant to promote any educational activities that are taking place (Arnold 2012).

Incarcerated students are critically aware of populist, media stereotypes of criminals, and how such (mis)representations may influence public opinion against prisoners, even those prisoners seeking to improve themselves through education. They appear critically conscious of how sensationalist crime dramas and news reporting feeds into the growing "moral panic" about dangerous "others," which in turn produces an increasingly punitive society (Harmes et al. in press).

Funding

There is insufficient funding available to enable prisoners to study at higher levels of education. Like all students, incarcerated students must find appropriate funding for their higher-level study but finding that funding is difficult (Coates 2016; Armstrong and Ludlow 2016). In the UK, there are loans available for higher-level study, including postgraduate study, but this is only accessible to prisoners if they have less than 6 years to serve in prison (Coates 2016). Other funding is sometimes available but it is not sufficiently advertized within the prison (Darke and Aresti 2016). In Australia, prisoners have the same access to tuition funding as other students. They can access Higher Education Contribution Scheme (HECS) funding which enables them pay of their fees when they earn a certain amount of money (Australian Government 2018). However, they cannot access Austudy which is a living allowance that also would provide funds for related expenses including textbooks. Certain universities have scholarship schemes which may enable prisoners to buy textbooks, for example, the University of Southern Queensland has incarcerated student bursaries.

Research Methods and Methodologies

Students in prison usually have a deep commitment to demonstrate to their families, supporters, and to society that they are capable of achieving something worthwhile which motivates them to succeed (Prison-based postgraduate students 2017). Even so, almost every approach to research is going to present significant challenges to the incarcerated postgraduate candidate. Obviously, those research projects that require significant amounts of specialized equipment, research labs or access to large numbers of people are going to be too difficult to undertake while incarcerated.

However, prisoners do have access to personal insights, and could write a reflective journal or "autoethnography" which can act as the data set for a PhD thesis (Arnold 2012). Time is often a commodity in prison and even if they work during the day, prisoners still have a lot of time in which to think and potentially study without the distraction of everyday life (Pike and Hopkins in press). It might also be possible for

prisoners to undertake creative arts research where the goal is the production of a significant art portfolio, piece of fiction or musical composition. Even so, the formulation of creative works is challenging given the relative dearth of supervisor feedback.

In the specific field of criminology, prisoners and ex-prisoners have "lived experience of prison" with an "insider perspective of prison research" (Darke and Aresti 2016). They have a unique position to research within the prison environment and "question established and commonly-held assumptions" (Newbold et al. 2014: 446).

Methodological and Ethical Issues

Providing a thesis in prison is obviously demanding and there are extreme difficulties in creating a piece of work that contributes something new to knowledge (Arnold 2012). Prison postgraduates will have some access to other prisoners within their prison, so conducting research with other prisoners is possible. However, the permissions process for this sort of research is extremely difficult. As already stated, auto-ethnography is also clearly possible, though supervision and ethics are complex and maintaining objectivity is extremely problematic (Newbold et al. 2014). The complex power dynamics between prisoners may also compromise the quality of the research, and it is difficult to know how to sufficiently mitigate those concerns to ensure that the data is of appropriate quality for analysis and discussion.

Prisoners do not normally get access to interview participants outside of prison but some universities arrange for a prisoner's friend or family member to act as their official supporter, enabling them to do Internet searches or conduct interviews for the incarcerated student. With good instruction, this can be very successful even if the supporter is not academically trained (Prison-based postgraduate students 2017). However, apart from being very time consuming, this clearly causes concerns for the supervisors, especially if the issues being researched are sensitive. Universities have a strong commitment to ethics and rigorous methodologies, so proxy searches and interviewers are clearly a dilemma.

How Universities Can Facilitate Prisoner Postgraduate Research: Some Recommendations

Though the number of postgraduate students in prisons in both the UK and Australia is small, there is clearly a willingness and maybe even a commitment to these students on the part of the universities involved. There are very often individual academics who will go above and beyond to give a prisoner an opportunity to better himself or herself. Even so, the resources and literature for those academics around supporting these students are scant. The following recommendations have been formulated and derived from the lived experience of the authors in supporting incarcerated students to study at a higher level.

Learn About the Prison Environment

The doctoral process will need to be adjusted for students in prison. Supervisors must be prepared for such adjustment prior to commencing the program. The set-up process may not be different but it has additional challenges in terms of how they are working ethically, how they will complete the research and what support can be accessed (e.g., family, online, and so on). University staff should seek to understand the particular characteristics of the prison environment. Where possible staff should visit the prison prior to organizing any research.

> [A]ctually seeing the tiny cells that my students had to share with another prisoner and hearing the blaring noise of voices and televisions reverberating off of metal surfaces helped me better picture their study conditions. While it is impossible for me to truly comprehend the very real problems of drugs, violence, and imprisonment, I did get a better understanding of what my students were up against in order to succeed. (McCarty 2006: 92)

Postgraduate students studying within prison do not have other candidates to talk to and may find it difficult to gauge their own progress; this often makes these students demanding and insecure. Frequent, proactive contact with postgraduate students in prison will help to assuage these insecurities, allowing the student to be more productive.

Manage the Expectations of the Candidate and Prison Officers

Prior to acceptance of the candidate, there needs to be a frank discussion about how the student will conduct their research and communicate with the outside world, particularly related to the Internet and how supervision will be managed. These discussions work best if there is already a good relationship between the university, the prison and the potential candidate.

The supervisor will need to provide sufficient information to the incarcerated candidate and to the prison officer. Regular postgraduate students are able to access the university website and to ask peers about processes and expectations. These resources will not be available to the incarcerated postgraduate, and so the need for this information needs to be accommodated by the supervision team.

A schedule of communication needs to be instigated and, as far as possible, be adhered to by the supervisor while understanding that the candidate may struggle from his or her end. Given the slowness and unreliability of communication to and from the prison, the supervisor needs to prioritize communication with the incarcerated candidate over his or her non-incarcerated candidates.

Be Cognizant of Sentence Length and Parole Conditions

Though there are some prisoners who will never leave prison or who are serving a long sentence, the vast majority of prisoners are serving short sentences, mostly

less than 1 year depending on the jurisdiction (Roberts and Irwin-Rogers 2015). When working with the candidate to plan his or her candidature, the supervisor needs to take into account sentence length. It could be that the prisoner will be released or up for parole shortly into their candidature. Data collection should be delayed until the prisoner is released.

The supervisor should also be cognizant that the formerly incarcerated candidate will be unlikely to continue his or her research immediately upon release. The priorities of ex-offenders upon release will be to find somewhere to live, secure an income and to reconnect with family or friends. The supervisor should be proactive in suggesting that the candidate take a break after release. The supervisor should be also be aware of any parole conditions that may impact the postgraduate student's ability to conduct research. For example, it is not unusual for former sex offenders to be prohibited from using the Internet during their parole.

Be Flexible

By opening their doors to prisoners, universities are investing in some of the most disadvantaged people in our society. Flexibility in the program is essential. For example, adjustments to milestones such as probation or confirmation may be required for all the reasons stated above. Extra time to complete these milestones should be negotiated long before they are due. Even then, the supervisor must be aware that the conditions for the prisoner may change very quickly. The prisoner may not be able to work on his or her research if they are called away for court appearances, medical attention or if they are moved to another facility.

The research student will require practical assistance throughout the duration of the study. Bureaucratic and administrative "red tape" should be relaxed to ensure equality of study (Prison-based postgraduate students 2017).

Provide Timely, Comprehensive Feedback

As already discussed, incarcerated postgraduate students have limited access to resources, a study sample, postgraduate peers and other specialists in the field. In our experience, this can lead to issues around direction and motivation for the student. Sometimes, incarcerated postgraduate students can follow a path which seems quite logical to them but which may not be appropriate. They can be a long way along this path before it is picked up by supervisors. Once discovered and the candidate is redirected onto a more appropriate trajectory, quite a lot of time and energy can have been wasted. The student may become disenchanted, leading to a lack of motivation and in extreme cases may cause the student to completely disengage or withdraw from study.

Though it may not be possible to completely solve these issues, strategies around feedback can help to alleviate them. It is important that the supervisor sets the expectation that work be submitted regularly. In response, the supervisor must

provide comprehensive and timely feedback. Because it will not be easy for the student to question or discuss the feedback with his or her supervisor, the feedback must be as unambiguous as possible. If the supervisor references articles or other literature, copies should be made and provided to the student.

Generally speaking, incarcerated students will be less likely to be aware of the processes within the university but also the nature of the supervisor–candidate relationship. The student may be very demanding and easily offended, not responding to criticism favorably (of course, this happens outside of prisons too!). The supervisor should not be offended but understand that the student is in a very vulnerable and difficult position where he or she may have much time to ruminate and have no one against which to check his or her perceptions.

How Prisons Can Facilitate Prisoner Postgraduate Research: Some Recommendations

For prisons, there are many advantages to having a cohort of incarcerated postgraduate students. Beyond reducing reoffending, higher-level education significantly impacts prison culture, reducing the number of violent incidents and allowing prisoners with long sentences to pass their time productively. These students in turn become positive role models for newer prisoners. Even so, the number of prisoners engaged in postgraduate research remains very low. The following recommendations have been formulated to help prisons grow their postgraduate numbers.

Ditch the Deficit Model

Across Australia and the UK, there are a few prisons which are moving away from the deficit model of incarceration. Instead of considering prisons as sites of deficit to be corrected, they can be viewed as sites of talent, experience, and potential to be fulfilled, to their individual benefit as well as to the benefit of the communities which they serve (Armstrong and Ludlow 2016). Such prisons, coined "learning" prisons by Pike and Adams (2012), are more positive about prisoners' outcomes, providing space, time, and support and enabling prisoners to grow and develop their hopes and aspirations. More prisons should follow this example of good practice.

Develop a Learning Culture

In order to ensure education meets the needs of all prisoners, prisons should develop a learning culture that incentivizes prisoners to see the benefits of improving their education. The whole prison learning environment requires digital technologies and access to the Internet to enable learning at all levels. To achieve this, security and education must come together to embrace the new safe technological solutions which are now available to prisons.

Spaces should be provided so that students can come together and offer mutual support, irrespective of what individuals are studying. These spaces should not only be available during standard work hours but also on weekends and evenings. Once these learning communities are established, prisoners will very often choose only to fraternize with other students, shunning those others who may not be supportive of their study or who cause trouble within the facility (Farley and Pike 2016).

Develop Closer Relationships with Universities

There is individually, socially, and institutionally transformative potential in growing communities of learning and meaningful interchange between universities and prisons (Armstrong and Ludlow 2016). Universities provide spaces in which people can pursue excellence through learning; seeking to contribute to society by making learning opportunities inclusive and by producing research that helps to make sense of the world and how it can be improved (Armstrong and Ludlow 2016). Prisons which support their prisoners into higher education are also showing that they recognize that individual and social transformation is achievable through individual growth.

Just as university personnel poorly understand the prison environment, so prison personnel poorly understand the university environment. Universities are complex institutions made up of many parts. There is not just one person to contact to resolve issues or to provide information but a range of contacts across many areas. If possible, prison personnel should visit a university and meet those people with who they are likely to have contact. One, and preferably two or more people within the prison, should have oversight of the incarcerated higher education and postgraduate students within the prison. This role would also be responsible for remaining in contact with the university and ensuring that contact lists are kept up to date. Applications for study or for extensions should be submitted as early as possible to allow for suitable accommodations to be made.

Conclusion

Prisons and universities are both institutions that seek to play a part in being individually and socially transformative (Armstrong and Ludlow 2016). Ideally, postgraduate students need to belong to a learning community with Internet access and meaningful communication with academics and other students. This can be made possible for incarcerated students but there are currently many obstacles. In order to alleviate these, it is important that all parties, at all levels, have a shared vision of how, why, and what postgraduate students can and cannot do in their research. Planning the research requires forward thinking and flexibility from management with commitment from staff at all levels within the universities and prisons. Alternatives can be an option such as family supporters and temporary release on license to a university but these must be sought out and carefully planned. Further

research is needed to establish how to balance public security and anxieties about convicted criminals against the need to provide fair and comparable access to education for the most marginalized and isolated of student populations (Harmes et al. in press). There is clear evidence that educating prisoners improves the lives of prisoners, their families, and their communities, and lowers reoffending with fewer victims of crime.

This chapter has highlighted why education in prison is important and how we could enable more prisoners to progress to postgraduate levels. It describes the challenges to study higher education and postgraduate research within the prison environment and how these might be ameliorated with careful communication, planning, and resourcing. It challenges the assumptions of both prison and university administrators when considering how incarcerated students may undertake postgraduate research while in prison. The chapter concludes with a series of recommendations for universities and prisons around enabling prisoners to become postgraduate students while still in custody.

Many individuals who are on the periphery of the criminal justice system may have cynical and well-observed critiques of human motivation, and of systems and practices. Certainly, there are many examples of individuals who have been educated before or during incarceration that go on to become famous agents for reform (e.g., Nelson Mandela). Perhaps if academics reconsider how research might look, feel, and be enacted in such a different context, then we may reconsider the potential for so much intellectual energy to be directed at the difficult questions of life.

References

Abbott-Chapman, Joan. 1994. The challenge of retention: Raising and meeting students' educational expectations. *Youth Studies Australia* 13 (2): 17–20.

Andersen, Synøve Nygaard, and Torbjørn Skardhamar. 2015. Pick a number: Mapping recidivism measures and their consequences. *Crime & Delinquency* 1–23.

Andrew, Jane. 2007. Prisons, the profit motive and other challenges to accountability. *Critical Perspectives on Accounting* 18 (8): 877–904.

Armstrong, Ruth, and Amy Ludlow. 2016. Educational partnerships between universities and prisons: How learning together can be individually, socially and institutionally transformative. *Prison Service Journal* 225: 9–17.

Arnold, Josie. 2012. Teaching postgraduate students in high security prison 2002–2011. *International Journal of Asian Social Science* 2 (6): 942–949.

Australian Government. 2018. Study Assist: Information for students about government assistance for financing tertiary study. http://studyassist.gov.au/sites/studyassist/helppayingmyfees/hecs-help/pages/hecs-help-welcome. Accessed 14 Jan 2018.

Australian Government Productivity Commission. 2017. Report on Government Services, Chapter 8: Corrective services. https://www.pc.gov.au/research/ongoing/report-on-governmen t-services/2017/justice/corrective-services. Accessed 29 Nov 2017.

Baker, Janet. 2003. Opening one door wider – Expanding opportunities for prisoner higher education through Open Learning Australia (OLA). Paper presented at the IFECSA conference: Unlocking doors – Rebuilding lives through education, Surfers Paradise.

Behan, Cormac. 2014. Learning to escape: Prison education, rehabilitation and the potential for transformation. *Journal of Prison Education and Re-entry* 1 (1): 20–31.

Crewe, B., Warr, J., Bennett, P. and Smith, A. 2014. The emotional geography of prison life. Theoretical Criminology, 18(1): 56–74.

Bourdieu, Pierre. 1985. The forms of capital. In *Handbook of theory and research for the sociology of education*, ed. John Richardson, 241–258. New York: Greenwood.

Brazzell, Diana, Anna Crayton, Debbie A. Mukamal, Amy L. Solomon, and Nicole Lindahl. 2009. *From the classroom to the community: Exploring the role of education during incarceration and reentry.* New York: Urban Institute, Justice Policy Center/City University of New York, John Jay College of Criminal Justice.

Brown, Kevin, Jon Spencer, and Jo Deakin. 2007. The reintegration of sex offenders: Barriers and opportunities for employment. *The Howard Journal of Crime and Justice* 46 (1): 32–42. https://doi.org/10.1111/j.1468-2311.2007.00452.x.

Castells, Manuel. 1996. *The rise of the network society.* Cambridge, MA: Blackwell.

Castells, Manuel. 2004. Informationalism, networks and the network society: A theoretical blueprint. In *The network society: A cross-cultural perspective*, ed. Manuel Castells, 3–45. Cheltenham: Edward Elgar.

Clark, Rod. 2016. How education transforms: Evidence from the experience of Prisoners' Education Trust on how education supports prisoner journeys. *Prison Service Journal* 225: 3–8.

Coates, Dame Sally. 2016. *Unlocking potential: A review of education in prison*. London: Ministry of Justice.

Costelloe, Anne. 2014. Learning for liberation, teaching for transformation: Can education in prison prepare prisoners for active citizenship? *Irish Journal of Applied Social Studies* 14 (1): 30–36.

Criminal Justice Alliance. 2012. *Crowded out? The impact of prison overcrowding on rehabilitation*. London: CJA.

Czerniawski, Gerry. 2015. A race to the bottom – Prison education and the English and Welsh policy context. *Journal of Education Policy* 1–17.

Darke, Sacha, and Andreas Aresti. 2016. Connecting prisons and universities through higher education. *Prison Service Journal* 225: 26–32.

Dempsey, Jack. 2013. *Sustaining the unsustainable: Police and Community Safety Review, final report*. Brisbane: Queensland Government Police and Community Safety Review.

Department for Works and Pensions. 2012. *Social justice: Transforming lives*. London: HM Stationary Office.

Duwe, Grant, and Valerie Clark. 2014. The effects of prison-based education on recidivism and employment. *The Prison Journal* 94 (4): 454–478.

Farley, Helen. 2017. Rehabilitation through education: Implementing an innovative technology solution across multiple jurisdictions in Australia. Paper presented at the International Corrections and Prisons Association conference: Innovation in rehabilitation, building better futures, London.

Farley, Helen, and Joanne Doyle. 2014. Using digital technologies to implement distance education for incarcerated students: A case study from an Australian regional university. *Open Praxis* 6 (4): 357–363.

Farley, Helen, and Anne Pike. 2016. Engaging prisoners in education: Reducing risk and recidivism. *Advancing Corrections: Journal of the International Corrections and Prisons Association* 1: 65–73.

Farley, Helen, and Julie Willems. 2017. Digital equity: Diversity, inclusion and access for incarcerated students in a digital age. Paper presented at the Me, Us, IT: ASCILITE2017, Toowoomba.

Farrall, Stephen, Anthony Bottoms, and Joanna Shapland. 2010. Social structures and desistance from crime. *European Journal of Criminology* 7 (6): 546–570.

Goffman, Erving. 1961. Asylums: Essays on the social situation of mental patients and other inmates. Harmondsworth: Penguin Books.

Harmes, Marcus, Susan Hopkins and Helen Farley. in press. Beyond incarcerated identities: Identity, bias and barriers to higher education in Australian prisons. International Journal of Bias, Identity and Diversities in Education.

Hopkins, Susan. 2015. Ghosts in the machine: Incarcerated students and the Digital University. *Australian Universities Review* 57 (2): 46–53.

Hopkins, Susan, and Helen Farley. 2015. e-learning incarcerated: Prison education and digital inclusion. *The International Journal of Humanities Education* 13 (2): 37–45.

House of Commons Library. 2017. UK prison population statistics, briefing paper number SN/SG/04334. London.

Karimshah, Ameera, Marianne Wyder, Paul Henman, Dwight Tay, Elizabeth Capelin, and Patricia Short. 2013. Overcoming adversity among low SES students: A study of strategies for retention. *Australian Universities Review* 55 (2): 5–14.

Lee, Christopher, Helen Farley, Jacinta Cox, and Stephen Seymour. 2017. Tackling Indigenous incarceration through promoting engagement with higher education. In *Indigenous pathways and transitions into Higher Education: From policy to practice,* ed. Jack Frawley, 169–188. Springer Open. Singapore

Mackay, Anita. 2015. Overcrowding in Australian prisons: The human rights implications. *Precedent* 128 (May/June): 37–41.

McCarty, Heather Jane. 2006. Educating felons: Reflections on higher education in prison. *Radical History Review* 2006 (96): 87–94. https://doi.org/10.1215/01636545-2006-005.

McCollom, Sylvia G. 1994. Prison College Programs. *The Prison Journal* 74 (1): 51–61.

Ministry of Justice. 2013. *Justice data lab re-offending analysis*. London: Ministry of Justice.

Nally, John M., Susan Lockwood, Taiping Ho, and Katie Knutson. 2014. Post-release recidivism and employment among different types of released offenders: A 5-year follow-up study in the United States. *International Journal of Criminal Justice Sciences* 9 (1): 16–34.

Newbold, Greg, Jeffrey Ian Ross, Richard S. Jones, Stephen C. Richards, and Michael Lenza. 2014. Prison research from the inside: The role of convict autoethnography. *Qualitative Inquiry* 20 (4): 439–448.

Open University. 2017. OpenLearn website. http://www.open.edu/openlearn/. Accessed 14 Jan 2018.

Pike, Anne. 2014. *Prison-based transformative learning and its role in life after release.* Unpublished PhD thesis, The Open University, Milton Keynes.

Pike, Anne, and Anne Adams. 2012. Digital exclusion or learning exclusion: An ethnographic study of adult male distance learners in English prisons. *Research in Learning Technology* 20: 363–376.

Pike, Anne, and Susan Hopkins. in press. 'Education is Transformational:' Positive identity through prison–based higher education in England and Wales. *International Journal of Bias, Identity and Diversities in Education*.

Pike, Anne, and Ruth McFarlane. 2017. Experiences of post-secondary learning after prison: Reintegrating into society. In *Life beyond crime: What do those at risk of offending, prisoners and ex-offenders need to learn?* ed. Paul Crane, 258–262. London: Lemos & Crane.

Pompoco, Amanda, John Wooldredge, Melissa Lugo, Carrie Sullivan, and Edward J. Latessa. 2017. Reducing inmate misconduct and prison returns with facility education programs. *Criminology & Public Policy* 16 (2): 515–547. https://doi.org/10.1111/1745-9133.12290.

Prison-based postgraduate students. 2017. Private communication with author.

Prisoners' Education Trust. 2012. *Brain cells 2: Listening to prisoner learners*. Mitcham: Prisoners' Education Trust.

Prisoners' Education Trust. 2017. *Prison University Partnerships in Learning (PUPiL)*. Mitcham: Prisoners' Education Trust.

Roberts, Julian V., and Keir Irwin-Rogers. 2015. Sentencing practices and trends, 1999–2013. In *Exploring sentencing practice in England and Wales*, ed. Julian V. Roberts, 35–60. London: Palgrave-Macmillan.

Ross, Jackie. 2009. *Education from the inside, out: The multiple benefits of college programs in prison*. New York: Correctional Association of New York.

Selwyn, Neil. 2010. Degrees of digital division: Reconsidering digital inequalities and contemporary higher education. *RUSC, Universities and Knowledge Society Journal* 7: 33–42.

Selwyn, Neil, and Stephen Gorard. 2003. Reality bytes: Examining the rhetoric of widening educational participation via ICT. *British Journal of Educational Technology* 34 (2): 169–181.

Sims, Julian., Vidgen, Richard., and Powell, Philip. 2008. E-Learning and the Digital Divide: Perpetuating Cultural and Socio-Economic Elitism in Higher Education. *Communications of the Association for Information Systems* Vol. 22, Article 23. Available at: http://aisel.aisnet.org/cais/vol22/iss1/23

Torre, Maria Elena, and Michelle Fine. 2005. Bar none: Extending affirmative action to higher education in prison. *Journal of Social Issues* 61 (3): 569–594. https://doi.org/10.1111/j.1540-4560.2005.00421.x.

United Nations. 2009. Promotion and protection of human rights, civil, political, economic, social and cultural rights, including the right to development: Report of the Special Rapporteur on the right of education, Human Rights Council, 11th session, agenda item 3. UN General Assembly. Geneva.

Visher, Christy A., Sara A. Debus-Sherrill, and Jennifer Yahner. 2011. Employment after prison: A longitudinal study of former prisoners. *Justice Quarterly* 28 (5): 698–718. https://doi.org/10.1080/07418825.2010.535553.

Warner, Kevin. 1998. The "prisoners are people" perspective – And the problems of promoting learning where this outlook is rejected. *Journal of Correctional Education* 49 (3): 118–132.

Warr, Jason. 2016. Transformative dialogues: (Re)privileging the informal in prison education. *Prison Service Journal* 225: 18–25.

Working Links. 2010. Prejudged: Tagged for life; a research report into employer attitudes towards ex-offenders. http://workinglinks.co.uk/pdf/Prejudged%20Tagged%20for%20life.pdf. Accessed 17 Oct 2017.

Wynne, Sean. 2001. Education and security – When the twain do meet. *Journal of Correctional Education* 52 (1): 39–42.

Part III

Pedagogy and Postgraduate Programs

Future-Proofing Postgraduate Learning and Assessment Strategies for Deeper Learning

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Abstract

In the twenty-first century, teachers in postgraduate education are, consciously or otherwise, attempting to prepare students to operate in "complex" contexts where outcomes are often unknown. The teaching role and task for academics is evolving from content provider and knowledge guardian into process designer and professional coach. Conversely, the learning role and task for students is

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emerging as one that requires engaging with personal "attributes" and developing capacities for knowledge integration as part of a lifelong learning strategy. To prepare graduates for a rapidly changing world and workplace, this chapter demonstrates future-proofed teaching and learning strategies together with attribute-based approaches to assessment using innovative software. The implementation of these in different postgraduate degrees at two Australian universities is used to demonstrate how these changing paradigms can be embraced by students, academics, and external accrediting bodies.

Keywords
Learning in action · Postgraduate study · Assessment strategies · Knowledge transition

Introduction

When examining postgraduate contexts, it appears many students still expect to "be told" what is required of them and for the teacher to provide all they need. Such overdependence on the "teacher" is in stark contrast to workplace expectations where the same individuals, as employees, are expected to exhibit independence and self-direction. The difficulty for postgraduate students in making the transition to independence as learners has been the subject of work by researchers including Brookfield (1998) and Mezirow (2006). Academics anchored in familiar teaching routines find it difficult to provide for the uncertainty and ambiguity which is the norm in graduates' workplaces. The comfortable familiarity of being "in charge" as the educator, supported by systemic requirements for grading, selection, and reporting, together with expectations about "being the teacher," inhibits consideration of alternative teaching and learning strategies. Argyris (2008) and Argyris and Schön (1996) called such feelings "defensive routines." They emphasized the value of reflection and reasoning about experiences, but found that both learners and educators, however intelligent, often resort to defensiveness, finding it hard to learn how to learn in this way. Argyris (2008, p. 11) found that "The key to any educational experience designed to teach senior managers how to reason productively is to connect the program to real business problems."

Experiential learning and reflection is ideal for postgraduate contexts because it ". . . supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity" (Brown et al. 1989, p. 39). In effect it allows students to participate collaboratively in a classroom "organization" and then reflect individually about lessons learnt. This relocates responsibilities for acquiring learning from teacher to student removing some of the pressure on the academic to "be the teacher." It also allows students to learn within boundaries that are ". . . firmly set by the task, culture and history of the community" (Nonaka et al. 2000, p. 15). An experiential learning cycle that involves thinking, doing, watching, and feeling (Kolb 1984) links abstract concepts to active experiments, providing a concrete experience followed by opportunity for reflection. Our framework for shaping

pathways to achieve a shift in focus from teaching to learning is based on a number of current theories, of which the Cynefin domains of knowledge (Snowden 2000) is explored.

Our future-proofed approach to assessment strategies is based on encouraging students to "own" their postgraduate development journey through regular feedback that foregrounds the "attributes" students are developing on their personal journeys. To be relevant to employability, university assessments must be composed of tasks that contribute to acquiring a coherent framework of graduate attributes rather than passing subjects and collecting marks. This shift in postgraduate students' engagement with assessment is facilitated by self-reflection through the use of software that gives visual feedback about their attribute development over time and across subject boundaries. This move to a developmental assessment culture is demonstrated through two postgraduate degrees that are using such innovative assessment software (REVIEW) to engage students and academics in criteria-based assessment and feedback. In particular the approach aims to facilitate the refocusing of students' learning approaches and ensure their engagement with assessment and feedback as an active part of their learning program.

Assessment Frameworks: Refocusing Assessment on Postgraduates' Development

Encouraging students to engage with assessment relating to their attribute development rather than focus on marks and grades is a difficult task when their previous learning experiences may have been mark driven. Consistent reference to their development of attributes in assessment is vital for this approach to be "warranted" (Knight 2007). This chapter focuses attention on the vital potential for graduate attributes to facilitate improvement and change in assessment methods and responses, as (Hughes and Barrie 2008, p. 14) note:

> Graduate attributes – as a statement of learning outcomes – offer a way of refocussing learning on the achievement of complex capabilities and developing dispositions and ways of thinking in preference to conceiving of learning only as the accumulation of disciplinary 'content.'

For the purposes of this chapter, we will use one of our author's definition of graduate attributes designed to include the learning and application of discipline knowledge (Thompson 2009, p. 402):

> Graduate attributes are the skills we want students' to develop, the qualities we want them to acquire and the knowledge literacies and conceptual frameworks we want them to construct, through a progressive program of discipline-based assessment tasks.

This definition was developed in the light of current reporting requirements that focus on evidence of student progression through attribute-based learning goals,

with guidelines developed by governments, accrediting bodies, and universities themselves. University courses, such as those explored later in the chapter, are required to report this evidence to accrediting institutions. For example, the AACSB (Association to Advance Collegiate Schools of Business) EQUIS (European Quality Improvement System) study "Assurance of Learning" and the GAC (Global Accreditation Center) reports as part of the accreditation process for the case studies.

The predominant assessment frameworks in higher education involve multiple choice tests and exams. They focus students' attention on a single mark or grade rather than the feedback that would indicate why they received a particular result. Previously in this section, we considered some methods that assist in student learning; however, Boud et al. (2014, p. 67) point out:

> Assessment is the single most powerful influence on learning in formal courses and, if not designed well, can easily undermine the positive features of an important strategy in the repertoire of teaching and learning approaches.

The use of single percentage marks or grades to describe student performance might be convenient for certification but does not assist postgraduates' understanding of their own capabilities. We explore a reframing of assessment to focus student attention on the development of important "graduate attributes" rather than on marks and grades that give no feedback about the capabilities demonstrated in the work submitted.

The use of the term graduate attributes has become standard in Australian universities, although in educational research literature, there are other terms such as "key skills" (Drew et al. 2002), "generic attributes" (Wright 1996), "key competences" (Mayer 1992), and "transferable skills" (Assiter 1995) and the terms "employability skills" and "soft skills" that are increasingly popular in the business sector (BIHEC 2007).

The Challenge of Reframing Assessment Cultures

Academics are being challenged with the reflection that most tests and exams can be passed by "cramming" revision and practicing past papers. But how can academics begin to reframe their assessment of students' work to assist the development of important attributes? Sadler (2005) identified that the implementation of standard-based and criterion-referenced assessment appears to have experienced difficulties in most discipline areas, for example, the writing of explicit criteria, the benchmarking of tutor grading, and the development of conversations around standards at different year levels. The linkage of criteria to graduate attribute categories has been vague, giving students no feedback about their development. However, one educational development since Sadler's (2005) paper has been the emergence of sophisticated marking and feedback software. For example, the REVIEW web-based system described briefly in this section engages students with assessment criteria through

self-assessment while providing longitudinal feedback about their graduate attribute development. There are many such systems; however, software itself is never a solution. As part of a handbook on developing and administering a university, the practicalities of assessment need to be placed together with the underpinning pedagogy. The following section identifies factors that we have found vital in generating a developmental assessment culture for both academics and students relevant to postgraduate contexts.

F A R Reaching Assessment: Strategies for Effective Learning

F A R is the acronym we are using in this chapter to identify the key factors in the development of a successful assessment culture. The two university case studies later in this chapter exemplify many of the aspects of these strategies, which include:

F = Fostering better understanding of teaching and learning concepts

The powerful "backwash effect" of mark-driven attitudes to assessment can undermine deep approaches to learning. The argument is simple – single percentage marks or grades conceal variations in student submissions while giving no feedback about the characteristics of each separate performance. For this reason, students tend to focus on the total mark and ignore the feedback. Those responsible for developing subjects and assessment tasks need sustained exposure to, and engagement with, teaching and learning practices and concepts. When educators stay abreast of trends in the key concepts briefly described below, the process of teaching/learning/assessment is experienced as a seamless continuity of effort, and students are able to see how their efforts "to learn" lead to success. The first key concept concerns understanding that curriculum development is more than setting content to be memorized. The second requires educators to be mindful of their own stance in regard to what constitutes "good education practice." The third concept necessitates developing flexibility in regard to the use of a wide range of teaching/learning practices suited to specific contexts and learners, rather than remaining "tied" to old habits.

The task of getting the curriculum "right" often causes educators and educational administrators to focus on *a set of courses constituting an area of specialization* (Merriam-Webster 2004). This may limit their attention to managing course content only, ignoring the need to consider teaching methods appropriate to the content and learners. To emphasize the problems with this approach, the Glossary of Education Reform points out that "... 'curriculum' or 'curricula' can apply to either all or only some of the component parts of a school's academic program or courses" (Great Schools Partnership 2015). This affirms that content alone is not "a curriculum" and emphasizes the need to develop both appropriate materials and methods.

Being mindful of a personal stance in regard to teaching and learning includes awareness of the array of forces affecting intentions. When learning goals drive curriculum decisions, rather than emerging as belated outcomes, students are the beneficiaries and teachers have clearer goals to work toward. Paraphrasing Kerr's

(1975) classic article about the "folly of rewarding A while hoping for B," we suggest that when assessment grades become the indicators of "success," rather than indicators of knowledge acquired, universities must expect that the number becomes the target, not the knowledge. When this is the case, it is little wonder that chasing a "number" or a grade tips the inclination toward cheating. Conversely, curricula that employ assessment processes focusing attention on what is learned, instead of merely on collecting reports of what can be recalled, will reduce the inclination to cheat as students experience the benefit of active acquisition of knowledge.

Tertiary educators often appear unaware of the philosophical stance(s) shaping their teaching practices, which may not be important while practices and expectations are aligned. However, such obliviousness is a problem for everyone, once emerging technologies and educational innovations unsettle familiar habits and challenge comfortable routines. While it can be demonstrated that faculty not only model their teaching after previous instructors but also draw upon a varied repertoire of knowledge and prior experiences (Oleson and Hora 2014), this repertoire will be severely limited in many cases, since few academics are qualified educators. Familiar teaching practices that position educators as authority figures, and locate students as recipients not creators of knowledge, are at best satisficing arrangements. However, they do favor traditional content-based approaches, in the belief that there is value in passing on unchanged accumulated wisdom. Such traditions advocating for adherence to the "eternal verities" have been parodied as the "Saber-Tooth Curriculum" (Benjamin 1939). Conversely, advocates of philosophies prioritizing attention to contextual matters and learners' needs and capabilities downplay emphasis on "content."

An inevitable outcome is that novice educators perceive teaching methods as arranged along a continuum from "content" to "student" focused. While familiar to westernized thinking, this approach creates an artificial dichotomy – unhelpful when current social and workplace conditions are being characterized as volatile, uncertain, complex, and ambiguous (VUCA) – see, for example, Kinsinger and Walch (2015). According to Kambhammettu (2014), effective management of such conditions requires vision, understanding, clarity, responsiveness, and agility – capabilities not often associated with strategies developed for stable conditions and nourished by beliefs about certainty and well-defined routes to success.

Fortunately it is possible to navigate among such competing stances by enacting Dewey's (1938, p. 5) proposal that:

> . . .an intelligent theory of education [must] ascertain the causes for the conflicts that exist [among competing claims for educational philosophies and practices] and . . . indicate a plan of operations proceeding from a level deeper and more inclusive than is represented by the practices and ideas of the contending parties.

Such a cooperative stance is made possible using the Cynefin domains of knowledge (Snowden and Boone 2007) and arranging particular stances according to their applicability to specific conditions of knowledge acquisition and use. In this way, appropriate teaching strategies are paired with relevant learning goals and

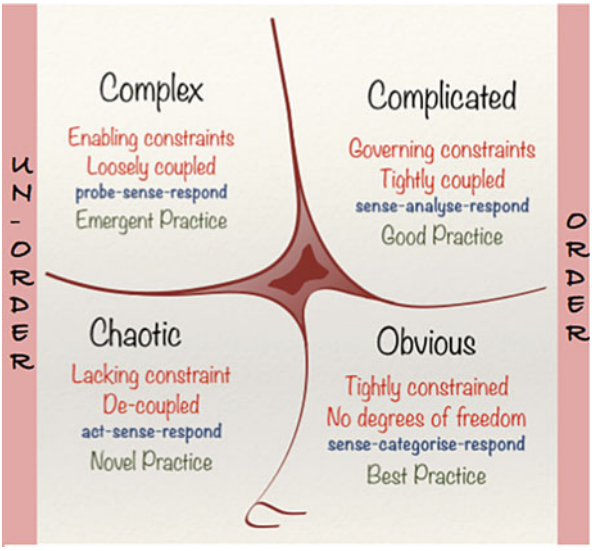

Fig. 1 Cynefin domains of knowledge

needs – and both students and teachers are more comfortable about what is expected of the context, the process, and each other.

The Cynefin model is a sense-making model using "order" – and its companion "un-order" – to reference conditions and responses in four domains around a fifth domain of "disorder." Boundaries among domains are not predetermined, and the model as a whole encourages attention to *requisite diversity*, supplying a typology of contexts and choices indicating situationally relevant actions to address conditions in each domain. The Cynefin model encourages exploration of relationships enabling approaches to communication and policy-making to be shaped to suit the context. Figure 1 identifies relationships between "cause" and "effect" under four sets of conditions and suggests guiding principles for action in each context. The driving force on the right-hand side of the model is "order" (stability and formality).

The "obvious" domain, when applied to educational contexts, is those conditions in which learners are most likely to be passive recipients of educator-dispensed knowledge. Everything is "known" and "orderly." The "complicated" domain is entered as learners develop capabilities, and "expert-led" tasks are used to expand knowledge, while the context continues to provide orderly settings for information transfer. In the complicated domain, knowledge is discovered through effort, experts provide guidance, and there are known "right solutions." However, all this changes when knowledge-seeking activity moves into the left-hand domains, which are characterized by "un-order" – a term indicating that there is a lack of certainty.

On the left-hand side of the model, the "complex" domain involves a search for knowledge for which there are no antecedents, although there are time and means to probe for "most likely" actions/solutions given what is known about conditions. Learners and educators entering this space must collaborate to apply their collective knowledge to the new conditions. While there is the possibility of satisfactory

outcomes of research and learning, these are known in advance. The "chaotic" domain simply requires action, as there is no time nor known means of dealing with what is happening. The scale of such chaos may be tiny (consider the 3 minutes Captain Sullenberger had to decide how to land his Airbus A320 in the Hudson River) or vast (e.g., rebuilding Hiroshima after the devastating atomic bomb). There is only turmoil and anything may contribute to an outcome. Learners and educators are explorers of the unknown – together.

The domain in the center of the image is usually called "disorder" and can be confusing and frightening, with the appearance of being best managed by immediately returning to "order." However, appearances are deceptive, and such an option is seldom effective. Although reverting to "order" may provide temporary relief, it is seldom sustainable since the underlying causes for "un-order" will reemerge at some future point, if not dealt with as uncertain and complex issues.

A = Assessment based on clear rationales linked to student learning outcomes

While much that is currently understood about curriculum implies a need for stability and clarity, it is evident that overdependence on these can, however unintentionally, encourage actions that do not achieve intended learning goals. Focusing on delivering content, in this age when content is available in unprecedented quantities via the Internet, does not encourage attention to the process of learning. Avoiding mention of the uncertainties students know they are facing reduces their respect for the learning process and providers. Using assessment as a tool to "measure" recall and memory divorced from learning encourages avoidance strategies rather than engagement. Assessing *as if learning matters* (Boud and Falchikov 2007) is what is needed, and the case studies that follow provide direct evidence of what can be achieved when university systems foster better understanding of teaching and learning concepts.

In many cases, the rationale for assessment tasks is limited to measuring *clear and certain* facts. This may mean that the actual learning acquired by individuals remains unidentified by the individual and the assessor, especially if the *right* questions are not being asked. The following four points all challenge traditional assessment practices and provide an alternative rationale based on many years of experience and research in relation to developing assessment processes that ensure students are acquiring useful, appropriate, and valid knowledge and skill:

- Assessment tasks must be much more than regurgitation of facts. They must be relevant to the development and employability of postgraduates, such that all unit/subject assessment tasks contribute to a structured framework of graduate attributes that is clear, visible, and consistent across all subjects in a course of study. *All* assessment activities need to contribute to the development of graduate attributes, including tests and exams.
- Marking criteria must be explicitly linked to a consistent range of graduate attribute categories (and relevant subcategories) which ensure that assessment tasks steer learners toward result-oriented future goals and guide acquisition of skills and knowledge that add value to the student's career.

- Academics must be provided with relevant help so that they understand how, and are able, to effectively align criteria and tasks. Support and encouragement from policy makers and academic leaders is essential to ensuring alignment between tasks and specific aspects of each learning goal.
- Consistent links must be established and maintained between day-to-day marking, criteria and collection and reporting of data about students' development of attributes. Appropriate and robust administrative assistance, together with the use of well-crafted assessment software and curriculum systems, is vital.

R = Rewarding teaching and learning champions

While academic contexts are efficient and highly effective in rewarding research activities and outcomes, the effort that is routinely put into teaching and learning activity is far less often acknowledged or rewarded. And least recognized of all is the matter of applying effective assessment strategies to guide positive outcomes for students. Providing acknowledgment and rewards to teaching and learning champions is a highly successful method for broadening the reach of good practice, since such recognition signals support from university leadership and confirms that new practices and strategies are indeed accepted and welcomed. Similarly, when systemic changes are made to ensure effective assessment, and provide consequent evidence of richer learning outcomes, the changes enable both teachers and students to focus on the learning component of the academic process. Whenever universities provide awards and acknowledgments to those making the effort to implement assessment practices that benefit students beyond assignment of a mark or grade, they are ensuring a winning combination of knowledge acquisition and alignment of good academic practice. We acknowledge that this may not be top of the list of priorities for administrators implementing complex change programs. However, our experience is that when assessment is the focus of attention, and academics are supported and acknowledged for their efforts, student satisfaction and their capacity to graduate on time are all improved.

Using Assessment Software to Focus Student Attention on Their Own Development

A software program, called REVIEW, is key to the success of the two cases described below. This innovative software was developed by academics at the University of Technology Sydney (UTS) for use by their peers to assist in the process of realigning students' perceptions of how to learn. When learning is lifelong and linked to professional attributes that are subject to measurement by external accrediting institutions, the assessment process also needs to be focused on measuring learning, not merely chronicling mark compilation and task completion. REVIEW provides academics with tools to focus attention on frameworks that link assessment with learning, evidencing the connections between skill and knowledge development, while simultaneously ensuring that internal assessment and external accreditation processes are demonstrably aligned.

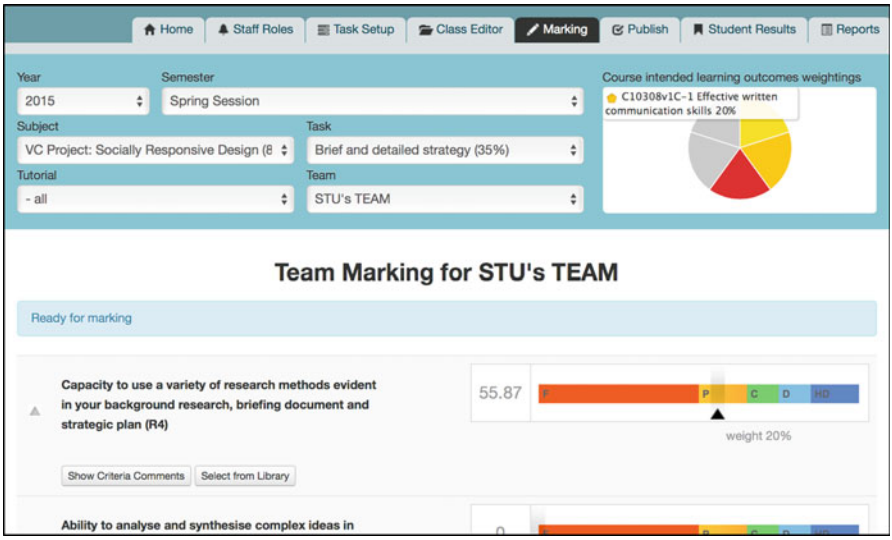

Fig. 2 Academic view of student record in REVIEW showing pie chart and sliding criteria markers

REVIEW uses highly visual means of tracking and reporting assessment data. The following images illustrate some of the views that are readily available to academics and students when using the software. In effect, both students and academics enter data into the system, and academics have access to several ways of providing developmental feedback to students on an individual basis. Figure 2 is a screenshot showing the marking record for a fictitious student – Stu Dent. The pie chart (top right) is generated automatically from criteria weightings ascribed to faculty graduate attribute (GA) categories. In Stu Dent's case, the task being assessed here only addresses three of the five GA categories. By rolling the cursor over the pie chart, it is possible to view subcategories within each segment. Student work is marked by dragging the marker along the sliding scale to create automatically calculated percentage marks. Academics can view the marks (as in this screenshot), but they are usually not visible to students to encourage them to remain focused on the criteria and feedback.

Figure 3 shows the marking screen on a different task after the academic member has saved their own gradings against each criterion. The student's self-assessments are now visible as blue arrows on the top edge of each grading slider and show that the fictitious student Stu Dent has overrated their performance on the first criterion (reflection) but underrated on the second (discipline knowledge).

Figure 4 shows the student's view of the screen once they have entered their assessment and before they can see the tutor's assessment.

Figure 5 shows Stu Dent's view of his assessment, after the tutor has entered relevant marks. As Stu Dent has significantly underrated their performance on one criterion and overrated on the other two of the criteria shown here, the tutor has provided further explanation, including comments below the criteria descriptions. The student's attention will be drawn to the feedback, since there is no mark to distract their understanding of the reason they received the allocated grade.

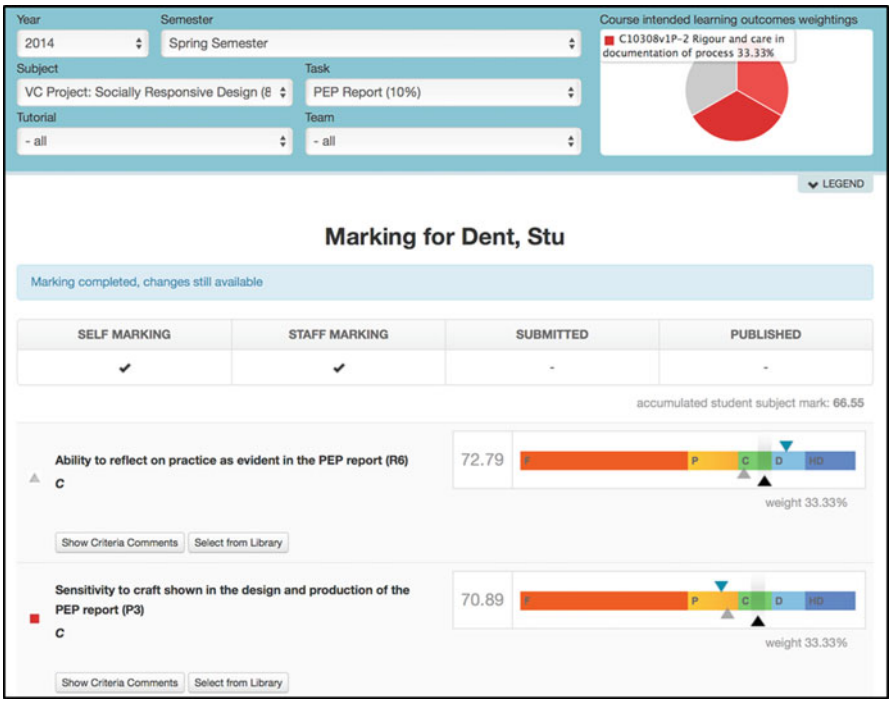

Fig. 3 Academic view showing Stu Dent's self-scoring

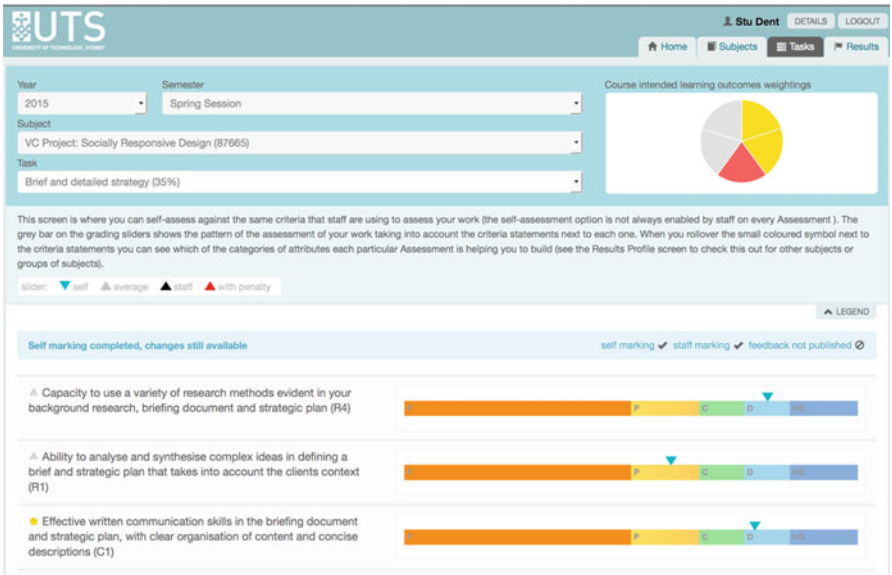

Fig. 4 Student view of assessment screen prior to academic marking showing

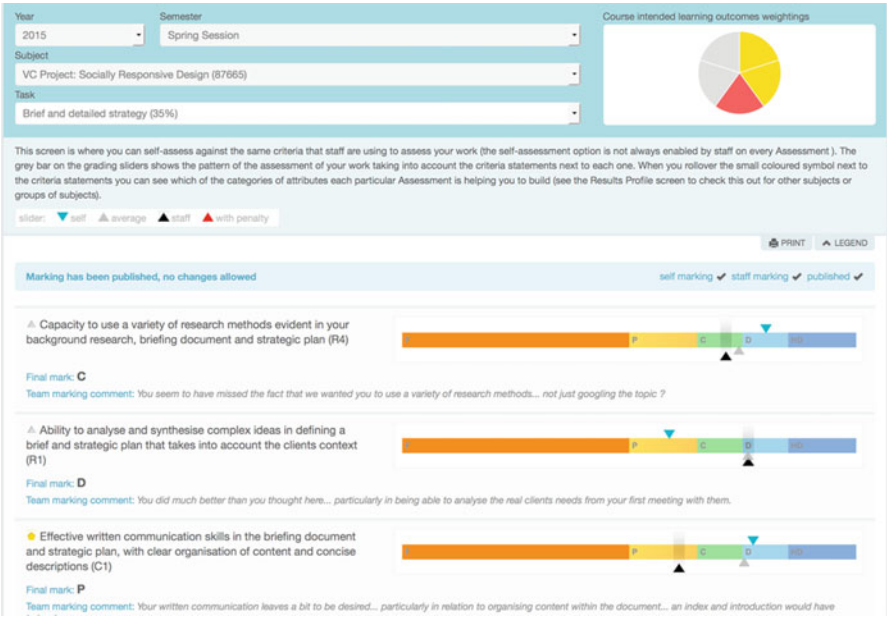

Fig. 5 The student's view of their record once all data is entered. Note no marks show up

In effect REVIEW provides a means for students and academics to collaborate on a dialogue concerning progress toward achievement of graduate attributes, without resorting to quibbles over numbers. They are actually considering the learning process itself, not a mark disassociated from either content or activity.

University Examples

Deployment and embedding of an assessment tool to shift the mark-based focus of postgraduate students toward grade-based attributes occurred simultaneously in two Sydney-based universities. Both universities piloted the REVIEW assessment tool with postgraduate students, and the following report outlines a number of context, strategy, accreditation and assurance issues, learning goals, and curriculum redesign, as well as noting lessons learned from the experiences.

Embedding Graduate Attributes at the University of Technology Sydney (UTS)

Context

The University of Technology Sydney (UTS) developed a learning and assessment framework based on five categories of graduate attributes (GAs) collectively known

as CAPRI. The acronym stands for **C**ommunication and group work, **A**ttitudes and values, **P**ractical and professional skills, **R**esearch and critique, and **I**nnovation and creativity in order to improve students' learning experiences. This framework was initially trialed in the Faculty of Design, Architecture, and Building (DAB) where the first course to adopt the framework across all subjects was the Master of Project Management (MPM). The framework makes extensive use of REVIEW with the intention of delivering to educators, students, and potential employers an accurate representation of what students have learnt throughout their course of study.

Strategic Goals

The MPM was first offered at UTS in 1986 and resides in the Faculty of Design, Architecture, and Building (DAB) where five strategic goals underpin all programs. These goals are as follows: unite disciplines through focus on creative urban cultures, technology-led thinking by design, recognition internationally, leadership in the professions, and impact beyond our discipline. These goals support the vision of UTS to be a world-leading university of technology with the purpose of advancing knowledge and learning to progress the professions, industry, and communities of the world. There is a detailed policy about assessing coursework subjects (University of Technology Sydney 2009b) and a procedure document (University of Technology Sydney 2009a) to embed the policy. Both documents "... acknowledge that assessment serves a range of purposes [and] is an integral part of the learning process for students and strongly influences what and how students learn in their courses" (2009b, p. 2).

Accreditation and Assurance

The MPM degree is accredited by the Project Management Institute Global Accreditation Centre (GAC) and the Australian Royal Institution of Chartered Surveyors (RICS). To achieve accreditation, appropriate assessment of student's learning must meet the accreditation requirements of these professional associations. A key criterion for review of the course is the alignment of each subject's learning objectives, through various assessment tasks, with the relevant GAs. This is specifically articulated in the GAC requirement to explicitly identify core learning outcomes and the way they are to be achieved through assessment strategies. Alignment with both professional and university GAs is evident in the design of the MPM curriculum. Assessment of student performance is directly linked to the extent to which students achieve intended outcomes at the course level, and there are direct links from each set of assessment criteria, to Course Intended Learning Outcomes (CILOs), and GAs. Achieving accreditation under these conditions was immeasurably helped by access to the data, graphs, and charts available in REVIEW.

Learning Goals

Embedding the UTS Model of Learning in the MPM curriculum enables students to develop their own capabilities in line with the GAs and is compatible with the UTS goal of providing practice-oriented, globally relevant, research-focused courses. This approach enables focused attention on development of specific attributes in the context of what, where, and how they are developed. Units of study are aligned to

select GAs and then linked to intended learning outcomes. The GAs reflect overall educational goals at each level of study, allowing current and prospective students, academics, employers, and the community to understand the intended professional, personal, and intellectual attributes of graduates.

Attributes emphasized by different aspects of the model include:

- Professional dispositions and ways of thinking and practicing as ethical professionals, developed through an integrated and diverse exposure to professional practice, review, and reflection
- The international perspectives and cultural competencies necessary to be a successful professional and citizen, developed through diverse forms of international and cross-cultural engagement, self-awareness, communication, and teamwork
- Ways of inquiring into, critically analyzing, generating, and extending professional and disciplinary and interdisciplinary knowledge and practice, developed through research-inspired and integrated learning
- Lifelong learning capabilities, including the values, the communication, information and technological literacies, and the capacities for judgment that underpin responsible professionalism and citizenship, developed through the integration of these themes into the overall curriculum

Curriculum Redesign

The redesign of the MPM curriculum to align with new DAB Faculty GA guidelines (Thompson 2013, p. 3) enabled the development of "... graduate attributes that focused on subject learning activities and assessment of students' development of an essential range of qualities, knowledge and skills needed for further study or employment in a rapidly changing world." The explicit focus on linking all assessment activities to specific GAs, aligned with learning outcomes and objectives, resulted in a coherent course structure for academics and students. This change impacted all subjects which required a complete rethink of all learning objectives and how students would accept online-only access to grades and not marks.

To contextualize the five GA categories, defined in Fig. 6, Course Intended Learning Outcomes (CILOs) are developed to align with subject learning objectives (SLOs) with each assessment. The integration of a new Course Information System (CIS) supported the GA program by ensuring academics linked all assessment criteria to GAs. The reports produced by CIS were used for university and external accreditation of the MPM and ongoing review of the subjects. Figure 6 was used to introduce academics to a hierarchy of the detail required when redesigning curricula to meet the requirements of the GA program. The general descriptions of the GAs at the top of the pyramid provide a framework for students and academics to link the assessment categories at the base of the pyramid to the GAs.

The MPM GAs were developed with input from the faculty, industry partners, and professional associations and reflect a deep understanding of trends in the Australian and international project management sector. They regularly report on their research and integrate new and emerging trends into their teaching and assessment strategies.

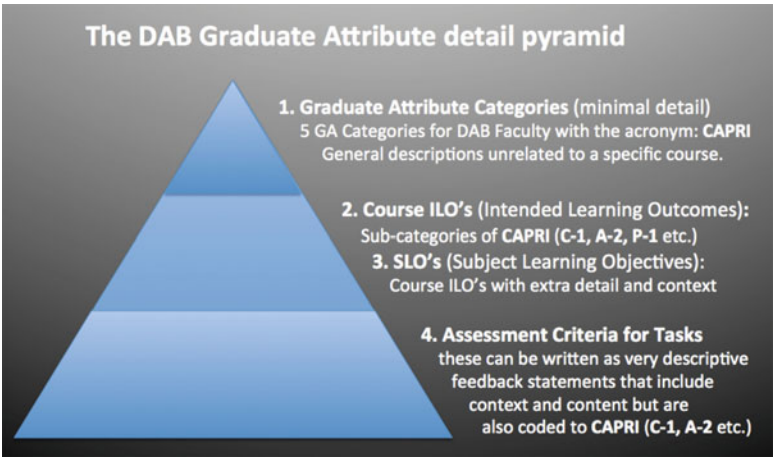

Fig. 6 Integration of graduate attributes at different levels

Lessons Learned

The tension created by introducing a multilayered alignment of CILOs within the content of each subject, and linked to all assessment tasks, was palpable. This complex change in approach was confronting, as practice was emerging in a state of "un-order" as depicted in the Cynefin domains of knowledge (Snowden 2000). The delivery of subjects in both face-to-face classes and translating the content to the online portal required a complete review of the content of all subjects to manage any impact on the students and also the alignment to the university's learning guidelines. During the implementation of the GA program, UTS was also launching a university-wide "Learning Futures" initiative which added to, and at the same time aligned with, the aims of the GA program. Learning outcomes and strategies, assessments, and compliance reviews were embedded into the approach required of all academics. There is anecdotal evidence that the impact on academics was, at different times, both engaging and polarizing. However, in general, the cultural shift in assessment practices has resulted in a deeper understanding of the benefits of "engaged learning" strategies.

Embedding Graduate Attribute at the University of New South Wales (UNSW)

Context

This account of embedding graduate attributes into courses and programs is set in the School of Risk and Actuarial Studies at the University of New South Wales (UNSW) Business School, the largest faculty at UNSW, a research intensive "Group of Eight" Australian University. The Actuarial School offers specialist Postgraduate Master's

Degree programs. The structure of the programs is informed by the professional accrediting requirements of the Institute of Actuaries of Australia and the UK and the Society of Actuaries (USA).

The design and assurance of actuarial courses and programs coexist within faculty and university contexts (strategy, assessment, and faculty accreditation policies). Each is described here briefly as they have informed the Actuarial School decision to systematically record assessment in REVIEW with the aim of improving assessment and, in particular, linking and tracking course-based assessment to graduate attribute formation. Within this context, the Master of Actuarial Studies is ranked number one in Australia, and the school is committed to improving the student experience through remodeling curriculum and assessment practices.

Strategy

The UNSW Business School 2020 strategy intends to provide an outstanding student business education experience, with a practical, industry-relevant focus. Key components are the adoption of active, personalized, flexible, and socially oriented learning and the incorporation of "assessment for learning." Digital innovation is seen as central to transforming course design and delivery, and innovation in assessment is part of the faculty "future state" roadmap. The university assessment policy (University of New South Wales 2012) is based on standard-based assessment (SBA), which requires clear description of assessment to students (including articulation of performance criteria and standards of judgment), fair and transparent processes, and useful and timely feedback. Quality assessment is seen as a powerful driver of student learning, and considerable faculty resources have been allocated to a range of assessment improvement projects, including the business school program assurance project.

Accreditation and Assurance

Business schools place a premium value on international certifications, most notably AACSB and EQUIS. The UNSW Business School allocates substantial resources to the pursuit and maintenance of these accreditations. Core accreditation requirements relate to clearly articulated, rigorous assessment and evaluation of practice, with an integrated "closing-the-loop" component, building continuous improvement mechanisms into courses and programs. While many accreditation requirements were already in place, the Actuarial School leadership saw an opportunity to improve assessment practice, embed continuous improvement processes, and make the formation of graduate attributes tangible to students. Graduate attributes are expressed at the UNSW Business School through a set of program goal statements, to which all learning and assessment activity is mapped. The faculty program learning goals (PLG) set includes discipline knowledge, critical and reflective thinking, communication skills, teamwork, and social and ethical skills.

The faculty assurance process required an online database and reporting system to replace a manual one, and after due deliberation, the Faculty Assurance Committee chose REVIEW. An extensive trial led to a decision to use REVIEW for describing, storing, and reporting on course assessment. A key feature related to assurance is

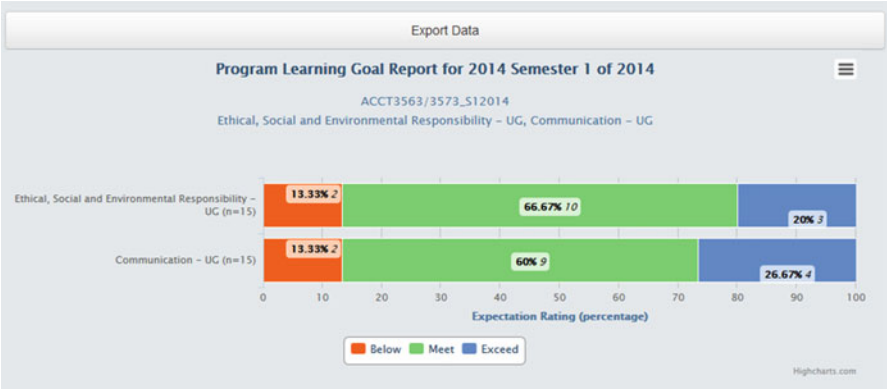

Fig. 7 A REVIEW generated program learning goal report

REVIEW's ability to map and report on assessment data aligned to program goals. This provides the basis for the longitudinal tracking and reporting of individuals or cohorts in achieving satisfactory program outcomes (see example in Fig. 7). Overall, the committee noted that REVIEW's criteria-based marking approach supported SBA and would likely have a positive effect on assessment practice.

Since 2011, REVIEW use at UNSW has grown from 4 to 200 courses per semester (2016). The Actuarial School is the first school at the UNSW to take a "whole of school" approach to systemic use of REVIEW. This decision was led by an early-adopter group who rose "through the ranks" to become the current school leadership team. This team based their adoption decision on observations of multiple benefits in assessment for students and academics. The school-wide rollout was supported by professional development sessions and "just-in-time" support by the Faculty eLearning team.

Course Experience

Two Actuarial School academics who embedded their marking in REVIEW recounted very positive experiences during interviews. Both recounted how some initial task marking redesign was required to move from a "holistic" question by question marking basis to marking aligned with criteria connected to program goals.

The Assistant Head of School (AHoS) identified key features of REVIEW, such as the ease of use, the highly visual style, and built-in features that reduce mark calculation errors. This encouraged him to promote REVIEW to his colleagues at school and faculty showcases. The second academic identified that marking in REVIEW was significantly faster and more enjoyable than his previous online marking experiences in GradeMark. Through several semesters using REVIEW, he identified other advantages including:

- Changing his "tick-box" marking schema in favor of a standard-based approach
- Reducing paper-based notation of marks and calculation errors

- Allowing holistic- and criteria-based judgment
- Improving the feedback he gave to students (gave more focused feedback than the "comment on everything" approach he used in GradeMark)

While REVIEW's linkage of criteria to PLGs was initially conceptually challenging, REVIEW's visual approach to systemically representing the relationship between assessment criteria and their "parent" learning goals makes this connection self-evident to academics and students. This academic reported that while students are used to assessments designed against questions, they are benefitting from the changed focus of performing to and getting feedback on criteria. In addition, the criteria marking focus has supported SBA approaches and improved practices. The stronger orientation of course assessment to program goals provides a pathway to strengthening the alignment of skills and knowledge development across the Master of Actuarial Studies. The ability for both academics and students to access visual, longitudinal assessment analytics derived from meaningful assessment data is a particularly good fit in the actuarial discipline's context. This ability to easily view more granularly described assessment data has been central to the school decision to systemically adopt REVIEW for tracking assessment.

In summary, the REVIEW experience in Actuarial Studies has given the academics and school:

- An assessment system facilitating improved assessment and fast-marking
- Assessment analytics
- Comprehensive storage and a "map" of assessment across the school
- Reports on student achievement against PLGs
- Fulfills Assurance of Learning (AoL) process

Learning Goals

The specific actuarial professional accreditation requirements align with the generic Faculty PLGs. The finalized program goal set is described in a three-tier hierarchy securely housed in REVIEW. Figure 8 illustrates the parent-child relationship of PLGs, objectives, and criteria. This (and supportive generic rubric sets) is the standardized map of learning statements by which REVIEW connects student marks to criteria, which are themselves "mapped up" to the parent categories, e.g., PLOs and PLGs. In this way, ALL assessment can be viewed in a learning-oriented context of developing student abilities related to their long-term program goals or graduate attributes. Further detail on how REVIEW has provided a platform for mapping learning and assurance reporting can be found online (Carroll 2016).

Curriculum Redesign

The School of Risk and Actuarial Studies is in the process of systemic curriculum renewal of the Master's Program by embedding active learning (Bonwell and Eison 1991). This will be achieved through integrating pre-class online materials with a high-student engagement, activity-led learning model. Programmatic changes to assessment include explicitly connecting learning and assessment to learning

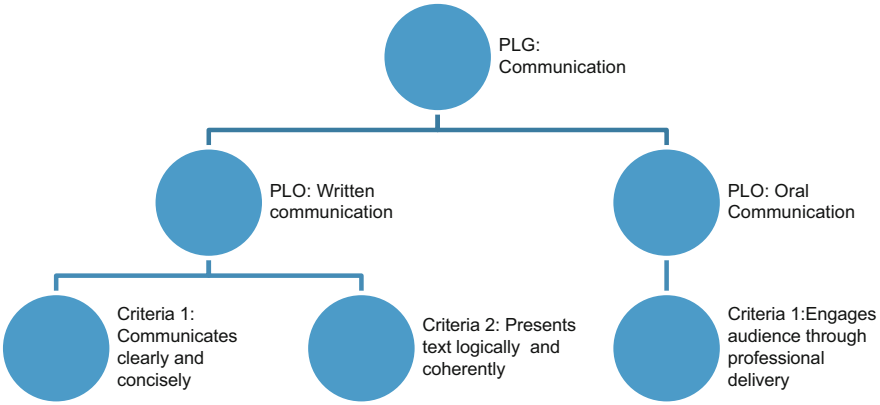

Fig. 8 UNSW business program learning goal hierarchy

outcomes. REVIEW's visualization of learning outcomes in assessment and encouragement of student engagement via self-assessment is expected to contribute to an improved learning culture (Boud and Falchikov 2007).

The Assurance of Learning (AoL) process has mandated set criteria for assurance purposes, requiring some assessment redesign. In most cases, however, this has had positive outcomes, introducing standard-based approaches to courses where tasks were previously marked holistically ("write a report and impress me") or marking was designed via "tick-box" systems (Part 1A/3, Part 1B/7, etc.). The predominant academic reaction toward the use of criteria-based marking has been positive. Academics and students find the clarity of criteria-based assessment approaches to be supportive of marking and judgment of and feedback on student performance.

Lessons Learned

The initial use of REVIEW was funded by a university innovation grant. Budget cycles, changes in faculty leadership, and the requirements for ongoing customization as part of our improvement culture have challenged the sustainability of REVIEW. However, the incontrovertible growth and the evidence of the "Win, Win, Win" culture of improved assessment experiences for students, academics, and the faculty have sustained the project (Carroll 2015). The improvements in reporting on assurance and the actual improvements in assessment practice and experience due to integrating assessment in REVIEW have been the most positive and practical outcome of the faculty's assurance project. As a faculty-led initiative, the business school's pioneering work in embedding a system-based approach (at scale) to meaningfully connect student assessment outcomes to degree (program) goals has shown the sector a possible future model for innovative systems that not only map but also improve assessment practices. Common feedback from academic users includes that marking via criteria in REVIEW focuses and supports their judgment processes. Some experienced academics report that this clarity

around judgment led to a decrease in student requests for remarks (Foster 2013). University trials show both quality improvements and marking time reductions of up to 30% (Finlay 2015). The improvement in the academic experience of marking has led to anecdotal observations of improvements in the quality of the feedback they provide, which warrants further study.

Close cooperation with UTS has improved both the platform and assessment practices in both institutions, with positive outcomes for students, academics, and for each university. The use of REVIEW now provides a stable platform for fast, visual reporting of all assessment data against program learning goals (Henry et al. 2013). The UNSW Business School is now examining the Actuarial School experience to decide whether to systemically embed REVIEW across other programs and schools.

Historically academics and students have not been empowered with systematically supported software providing the capability to "naturalistically" embed and track graduate attributes. Unless attribute or capability formation is explicitly embedded throughout courses in a program, they are likely to be seen as ephemeral. At the UNSW Business School, the increasing use of REVIEW provides an exemplar of not only embedding program goals meaningfully into assessment but also of promoting a "programmatic" focus among staff and students.

Conclusions

The importance of academics understanding teaching and learning strategies and their implications cannot be overemphasized, and it is hoped that the content of this chapter encourages readers to develop their own informed view of links among teaching, learning, and assessment strategies. The experience at the University of New South Wales (UNSW) is a compelling example of innovative software supporting positive change in assessment at course and program levels. This has been achieved through institutional commitment to improving assessment, consistent policy and professional support, and integrated use and ongoing customization of innovative software. Along with UTS, UNSW Business School has made a substantial investment in the customization of REVIEW, benefitting both institutions. Staff feedback and student focus groups at UTS have all pointed to REVIEW as the key driver of engagement in challenging changes to the educational environment. Apart from commercializing the software through an external digital agency, UTS has now centralized the system to make it available to all faculties with support from the Institute of Interactive Media and Learning.

In concluding this chapter, it is clear that institutional directives and "change initiatives" have a varied impact on those within the organization, ranging from cautious uptake to enthusiastic acceptance. However, we believe that engagement is the key to real improvement in learning and assessment strategies. The use of software systems such as REVIEW, designed and improved by academics who understand educational research and user experience, can facilitate the engagement

of all the institutional and external stakeholders involved. With this shift in focus from teaching to learning, the use of "learning-oriented" assessment tools and strategies of graduates are better supported to operate independently in "complex" learning contexts where outcomes are often unknown.

References

Argyris, Chris. 2008. *Teaching smart people how to learn*. Boston: Harvard Business Press.

Argyris, Chris, and Donald A. Schön. 1996. *Organisational learning II: Theory, method and practice*. Reading: Addison-Wesley.

Assiter, Alison. 1995. *Transferable skills in higher education. Teaching and learning in higher education series*. London: Kogan Page.

Benjamin, Harold Raymond Wayne. 1939. *Saber-tooth curriculum, including other lectures in the history of paleolithic education*. New York: McGraw-Hill.

Business, Industry and Higher Education Collaboration Council. (2007). Graduate employability skills. Graduate Employability skills report. Download 8 Nov. 2017 from http://www.voced.edu.au/content/ngv:19437

Bonwell, Charles C., and Eison, James. 1991. Active learning: Creating excitement in the classroom. ASHE-ERIC Higher Education Reports.

Boud, David, and Nancy Falchikov. 2007. *Rethinking assessment in higher education: Learning for the longer term*. London: Routledge.

Boud, David, Ruth Cohen, and Jane Sampson. 2014. *Peer learning in higher education: Learning from and with each other*. London: Routledge.

Brookfield, Stephen. 1998. Understanding and facilitating moral learning in adults. *Journal of Moral Education* 27 (3): 283–300.

Brown, J.S., A. Collins, and S. Duguid. 1989. Situated cognition and the culture of learning. *Educational Researcher* 18 (1): 32–42.

Carroll, Danny. 2015. Win, win, win: Future assessment systems. Accessed 24 May. https://www.academia.edu/14859674/Win_Win_Win_Future_Assessment_Systems.

Carroll, Danny. 2016. Meaningfully embedding program (degree) learning goals in course work. Accessed 6 Apr. http://transformingassessment.com/events_6_april_2016.php.

Dewey, John. 1938. *Experience and education*. New York: MacMillan.

Drew, Sue, Louise Thorpe, and Phil Bannister. 2002. Key skills computerised assessments: Guiding principles. *Assessment & Evaluation in Higher Education* 27 (2): 175–186.

Finlay, D., (2015) REVIEW Marking Report Design Department, Retrieved from https://www.dropbox.com/s/vzge3yjv0k9w3ix/Review%20Marking%20Report%20Design%20Dept.%20STD%20B%20Project%201%202015.docx?dl=0

Foster, G., (2013), Review: Academics Describe Marking Efficiency, NSW elearning video series, Retrieved from https://www.youtube.com/watch?v=gc8Yk8kOmDY

Great Schools Partnership. 2015. Glossary of education reform. Accessed 13 Apr. http://edglossary.org/curriculum/.

Henry, R., S. Marshall, and P. Ramburuth. 2013. *Improving assessment in higher education*. Australia: New South Press.

Hughes, C., and S. Barrie. 2008. Issues paper 5: Assessment – the explicit embedding of graduate attributes in assessment is essential for policy implementation. Australian Learning and Teaching Council. Accessed 27 Apr. http://www.itl.usyd.edu.au/projects/nationalgap/resources/discussionpapers.htm

Kambhammettu, V. 2014. Startups in the VUCA world. Accessed 14 May. https://www.linkedin.com/pulse/20140721171726-44842835-startups-in-the-vuca-world.

Kerr, Steven. 1975. On the folly of rewarding A, while hoping for B. *Academy of Management Journal* 18 (4): 769–783.

Kinsinger, P., and K. Walch. 2015. Living and leading in a VUCA world. Accessed 14 May. http://www.thunderbird.edu/article/living-and-leading-vuca-world.

Knight, Peter. 2007. Grading, classifying and future learning. In *Rethinking assessment in higher education: Learning for the longer term*, ed. David Boud and Nancy Falchikov, 72–86. New York: Routledge.

Kolb, David A. 1984. *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall.

Mayer, K. 1992. Key competencies. In *Report of the committee to advise the Australian Education Council and Ministers of Vocational Education, employment and training on employment-related key competencies for postcompulsory education and training; Editor Mayer, K. [Mayer Report]*. Australia: AEC.

Merriam-Webster. 2004. *Merriam-webster's collegiate dictionary.* Merriam-Webster, Springfield. Illinois

Mezirow, Jack. 2006. An overview on transformative learning. In *Lifelong learning: Concepts and contexts*, ed. Jim Crowther and Peter Sutherland, 24–38. New York: Routledge.

Nonaka, Ikujiro, Ryoko Toyama, and Noboru Konno. 2000. SECI, Ba and leadership: A unified model of dynamic knowledge creation. *Long Range Planning, Elsevier Science Ltd* 33 (1): 5–34.

Oleson, Amanda, and Matthew T. Hora. 2014. Teaching the way they were taught? Revisiting the sources of teaching knowledge and the role of prior experience in shaping faculty teaching practices. *Higher Education* 68 (1): 29–45.

Sadler, D. Royce. 2005. Interpretations of criteria-based assessment and grading in higher education. *Assessment & Evaluation in Higher Education* 30 (2): 175–194.

Snowden, David. 2000. Cynefin: A sense of time and space, the social ecology of knowledge management. In *In knowledge horizons: The present and the promise of knowledge management*, ed. C. Despres and D. Chauvel, 237–265. Oxford: Butterworth-Heinemann.

Snowden, David J., and Mary E. Boone. 2007. A leader's framework for decision making. *Harvard Business Review* 85 (11): 68–76.

Thompson, Darrall. 2009. Successful engagement in graduate attribute assessment using software. *Campus-Wide Information Systems* 26 (5): 400–412.

Thompson, Darrall. 2013. *UTS graduate attribute integration guidelines*. Sydney: University of Technology Sydney.

University of New South Wales. 2012. Assessment policy.

University of Technology Sydney. 2009a. *Procedures for the assessment of coursework subjects*. Sydney: University of Technolgy Sydney.

University of Technology Sydney. 2009b. *Policy for the assessment of coursework subjects*. Sydney: University of Technology Sydney.

Wright, P. 1996. *What are graduates? Clarifying the attributes of graduateness*. London: Higher Education Quality Council. Quality Enhancement Group.

Commencing an Australian Ph.D.

14

Margaret Kiley

Contents

Abstract

While there is substantial research related to doctoral education, the audiences for this research are generally candidates and supervisors. This chapter, however, examines issues in doctoral education that also need to be addressed by university administrative and managerial staff. For example, one question posed is: what are the institutional issues that need to be confronted in light of the changing nature of the entry qualifications of doctoral candidates? Another issue addressed in this chapter is the impact of the demographic shifts in doctoral candidates with increased enrollment, in large part due to international candidates coming with a variety of backgrounds and experiences. Additionally, issues such as the changes in the age of PhD students and their enrollment status (part-time or full-time) provide challenges for administrators and are addressed below.

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A further issue discussed is the change, both internationally and in Australia, in the employment outcomes of graduates with far fewer than in the past having realistic expectations of long-term academic positions. Addressing this issue and examining models provide insights into this area of concern.

The chapter concludes with a brief discussion of the issues for administrators related to supervisor development that is required to assist supervisors to understand and address the results of the changes outlined.

Keywords
Honours · Research education · Research training · Masters by Coursework · PhD · University managers

Introduction

In order to situate the Australian postgraduate research education agenda, this chapter begins by briefly outlining a range of structures that exist internationally for educating candidates to be researchers, that is, generally Masters and doctoral programs. It then examines substantial changes over the past 10–15 years in the area of research education and concludes by addressing the organizational and academic challenges resulting from these changes. While there is a particular focus on the Australian context, this context is situated more broadly within international agendas. Three major structures are addressed below.

In Europe, the contemporary research education experience is the result of the Bologna Declaration and Framework (European Ministers of Education 1999) with its 3 + 2 + 3 model, i.e., 3-year undergraduate, 2-year postgraduate, and 3-year doctoral arrangement. This approach tends to suggest that the commencing doctoral candidate has had a preparatory program in research skills development prior to enrollment and can move into their new PhD research program with relative ease.

Recently in Australia, the Australian Honours system, which for over 60 years has been the seen as the gold standard as preparation for undertaking a PhD program, has been questioned (Kiley et al. 2009). Using a 3+1 undergraduate and 4-year research degree model, the Honours year, as the additional undergraduate year, generally comprises one-third advanced disciplinary knowledge, one-third research skills, and one-third research project. Students with high marks in Honours were seen as having gained a firm grounding in research methods and approaches along with scholarly writing and presentation (Kiley et al. 2009). As a result it was common for universities to expect that the new doctoral candidate had developed the skills to commence immediately on their research project. However, as outlined below there have been changes in this area over the past decade or so.

On the other hand, in very broad terms the model in North America is different from both of the above models. While taking into account variations by institution and by discipline, the first few years of the PhD program in the USA are generally seen as being preparatory for the candidate to learn how to undertake research, that is, "they come ready to learn how to undertake research" through formal coursework of up to 2 years.

Changes over the past 10–15 years have focused attention on these different models and their underlying assumptions and created challenges for university managers.

What Has Changed over the Past Decade?

While the above structures underpin various programs internationally, there have been substantial changes over the past decade. These have included an increased number of doctoral students, changes in the demographic nature of candidates, increasing internationalization, changes to the models of doctoral education, and changes to employment outcomes.

Perhaps the most obvious change internationally is the increase in doctoral enrollments with the most notable being in Asia (Min and Mohamed 2015; UNESCO Institute for Statistics 2014). The trend is also repeated in North America (Maldonado et al. 2013), Australia (Group of Eight 2013), and the UK (Denicolo et al. 2010). Unsurprisingly much of this increase in the West is brought about by international candidate enrollments often enrolling in large numbers in particular disciplines such as engineering and business (Trounson 2014).

However, the overall increase in enrollments, particularly in the West, has often occurred without a matching increase in the number of academic staff able to supervise and mentor doctoral candidates. As a result, institutions are being required to reconsider strategies for supervision other than the 1:1 relationship that might have been common in more traditional arrangements in Europe, the UK, and Australia, an issue to be discussed later and of particular concern to managers.

Another change in the doctoral candidate cohort in a number of countries is variation in the age at commencement with many of the applied/professional disciplines attracting an older cohort compared with the "pure" disciplines (Becher 1994). From work by Pearson et al. (2008) and then Palmer et al. (2014) increasingly, Australian doctoral candidates are older with a mean age of 34 across all disciplines. Additionally, candidates in the 20–29 age group are more likely to be from outside the country and those in the 30–39 age group more likely to be domestic candidates. Clearly the variation in age between international and domestic candidates and across disciplines poses a number of issues for university management including the need to provide attractive alternative entry pathways and structured learning opportunities.

Often linked with the issue of older candidates enrolling is the issue of alternative entry qualifications. For example, rather than candidates possibly progressing seamlessly from an undergraduate to postgraduate qualification and then onto a research degree these older, professional entrants are likely to be seeking entry based on their experience rather than formal academic qualifications. These non-traditional entry qualifications can pose an issue for doctoral supervisors and university administrators.

Furthermore, in many countries there has been an increase on the number of candidates undertaking a PhD on a part-time basis for at least some of their candidature, in some disciplines up to 50%. This insight suggests that any strategies

developed to perhaps provide learning opportunities embedded into the PhD would have to take into account time pressures and availability for part-time candidates.

In Australia the involvement of indigenous candidates in doctoral education has been raised as a particular concern (McGagh et al. 2016; Trudgett 2014). Not only is the percentage of indigenous candidates enrolling in a PhD below what might be expected per head of population, but the completion rates are even more concerning. Addressing this issue in doctoral education, along with the entry and support of other diverse student populations, is a particular challenge for institutions.

A specific change for Australia is the reduction in the number of students enrolling in Honours and the percentage of candidates entering a PhD with Honours (Kiley et al. 2009). A number of reasons are given for this change including the unattractive nature of an undergraduate "add-on year" for international students and the limited recognition outside Australia of Honours as preparation for doctoral education. A possible outcome of fewer candidates entering a PhD without Honours, and at an older age often with professional experience, is that candidates may be seeking to undertake a PhD in a discipline that is different from their original area of study.

More critically for doctoral graduates in many Western countries is that the possibility of gaining employment in an academic position following graduation is often as low as 30% (McGagh et al. 2012; Group of Eight 2014). According to a report by the Australian Council for Educational Research (ACER) in 2010, "The total Australian workforce is expected to grow by 16.6% between 2007 and 2020 [and] the number of doctoral degree-qualified workers is expected to grow by 47.9% over the same period of time" (p. 2). As a result, increasing numbers of graduates are choosing or being caused to seek employment outside the academic environment. On the other hand, for example, in parts of Africa (Jorgensen 2012) and Asia (UNESCO Institute for Statistics 2014), there are still opportunities for graduates to gain an academic position on completion of their research degree. Preparing candidates for alternative pathways following graduation is a challenge addressed below.

In light of these changes, there are a number of implications for university management and academic staff in addressing these learning requirements resulting in some varied and creative responses to be discussed later.

However, before moving on, it is worth noting a few changes which are unpredictable and tend to be of the political and/or economic type. For example, following the terrorist attack on September 11, 2001, there was a substantial change in the countries where doctoral candidates from the Middle East were choosing or permitted to enroll. As a result, Malaysia, for example, became an attractive option for Islamic students who might otherwise have gone to the USA. Another influence is economic change, for example, the global financial crisis or the Southeast Asian financial crisis in the late 1990s. Such changes can cause substantial numbers of privately funded candidates to terminate their studies or for countries to reduce scholarship funding. A third and more recent change is the decision of the UK to withdraw from the European Union. This withdrawal is likely to have substantial impacts on funding for collaborative research and the mobility of doctoral candidates.

However, these changes, and the financial implications that derive from them, by their very unpredictable nature and given that they do not explicitly impact on entry qualifications, are outside the scope of this chapter but can be of great concern to university administrative and finance staff.

Responses to Change

The remainder of this chapter addresses ways in which university staff might be able to respond to the changes outlined above and the implications of these strategies. Firstly, issues of alternative entry requirements are addressed. Secondly, the chapter moves on to addressing two specific ways in which research knowledge and skills development might be provided: prior to PhD candidature or integrated within the PhD program. Thirdly, the issue of the introduction of transferrable/employability skills and preparation of PhD candidates for employment following graduation is addressed. Finally, the issue of supervision and changes to ways in which the traditional 1:1 model in New Zealand, the UK, Australia, and parts of Europe that might be caused by the increase in enrollments without a similar increase in staff numbers is also addressed.

Alternative Entry Qualifications

In Australia it is still common to talk about Honours *equivalence* with universities using Honours (First Class) or equivalent as the main criterion for awarding a PhD scholarship. But just what is that equivalence? Some years ago at a meeting of the Australasian Deans and Directors of Graduate Research, they were asked to work in groups to identify the knowledge, skills, and attitudes that they considered students arguably developed in Honours and that seemed to be so highly regarded. The Deans were challenged to not use the term Honours, but rather describe what the term meant to them. Similarly, a national project on Honours (Kiley et al. 2009, 2011) reported that respondents considered that gaining First-Class Honours indicated deep disciplinary knowledge and sound knowledge of research methods and methodology. The expected skills covered problem-solving, communication, academic writing, teamwork, time and project management. The attitudes that were reported included a sense of "Identity and belonging to a discipline and its research culture" (Kiley et al. 2009, p. 17).

A quick glance at the list, particularly the *skills*, suggests that there were high expectations of candidates entering a PhD, implying that before they had undertaken any of their doctoral training program, they had already gained advanced research skills and in a sense could "hit the ground running." As the number of Honours graduates is decreasing, at least as a percentage of those entering a doctorate, and those with alternative qualifications is increasing, institutions are being required to identify and make known what they think is Honours equivalence and how applicants might demonstrate that equivalent *knowledge*, *skills*, and *attitudes*.

Research Skills Development: Prior to Doctoral Entry

Given the variation in candidate entry, an issue for institutional staff is how they might provide flexible entry pathways and at the same time ensure that all candidates have the requisite skills to successfully complete a PhD in a timely manner, generally seen as 4 years or less.

Before discussing the impact of enrollments, it might be helpful to briefly outline the significant difference between postgraduate coursework/taught awards and research postgraduate awards. In Australia this is caused by the requirement for an Australian research degree to include at least two-thirds research, anything less than that and the degree is classified as a coursework degree. The significance of this is clear when one appreciates that students (international and domestic) pay full tuition fees for a postgraduate coursework degree, whereas domestic candidates pay no tuition fees for a research degree. This funding differential becomes more critical when considering a coursework degree as a precursor for entry to a PhD.

Despite the funding issues, an obvious answer to preparing potential doctoral candidates is through a Masters by Coursework program that involves opportunities for those students interested in progressing to a PhD to develop the necessary qualifications. However, for institutional administrators and leaders, this can pose a problem, and that is the possibility that the Masters by Coursework might be expected to do two things and perhaps not do either particularly well. Generally Masters by Coursework programs are aimed at assisting students with continuing professional employment. However, from the research on Australian Masters by Coursework programs it emerges that many students, particularly those from overseas, are unaware of the "terminal" nature of a Masters by Coursework, that is, the program does not generally lead onto a research degree (Kiley 2013). Clearly an issue for institutions is to provide clarity regarding the various Masters pathways prior to enrollment and during the program. However, data also indicate that a frequent motivation for a Masters by Coursework graduate to enroll in a PhD is the encouragement of lecturers or conveners who suggest that the student "has what is needed" to undertake a doctorate (Kiley 2013). Given this situation the need to provide flexibility and clear guidance on course selection is critical. For example, a role for program conveners might be to meet with each student partway through their Masters degree and discuss with them aims and aspirations following graduation. Where students indicate quite clearly that they are happy with continuing in a professional stream, with no thought of moving onto a research degree, then they might be advised to select courses with more of a professional bent. On the other hand, where students expressed interest, perhaps even surprise, that they are enjoying the research aspects of their degree and are perhaps thinking of progressing to a research program then they would be strongly encouraged to select additional research methods courses and a larger research project. The focus on research methods is important, as while PhD supervisors of candidates who had entered their PhD with a Masters by Coursework qualification, rather than Honours, were generally positive about the disciplinary knowledge and attitudes of candidates, they commonly reported that these candidates lacked knowledge and skills in research methods and theory (Kiley 2014).

Another possible approach to preparing candidates with the necessary research knowledge and skills to undertake a PhD is to require all potential entrants who do not already have adequate research qualifications, to undertake a program such as a Graduate Certificate or Graduate Diploma in Research Methods. While this could be attractive to fee-paying domestic candidates, the difficulty arises for international candidates who are unlikely to want to pay fees and travel to another country to "simply" gain a 6-month graduate certificate. For this option to be attractive, universities might have to guarantee entry into a PhD once the student had successfully completed the program.

The other option offered by various institutions in Europe, the UK, and Australia is the Master of Research (MRes). A particular example of an Australian university that developed such an award is Macquarie University. In 2011 the University decided to alter their standard entry PhD qualification from Honours to a Master of Research (MRes) bringing it in line with the Bologna 3 + 2 + 3 model. By designing the program to have most of the formal research training in the MRes, the University argued that it could provide better support for candidates in anticipation that they would be able to complete their PhD in 3 years compared with a sector average of above 4 years. Perhaps an interesting insight for other institutions is that a number of successful graduates from the MRes, instead of continuing into the Macquarie PhD which was the anticipated pathway, sought entry into other institutions based on the results of their MRes.

In light of the MRes model and the increase in students enrolling in a coursework master's and then progressing to a PhD, another option might well be the provision of a joint master's/PhD program. Such a program would be designed to specifically allow choice partway through the Masters degree to be more or less research training intensive or to have a stronger disciplinary emphasis given a possible change of discipline from the undergraduate award.

In developing such programs, it would be important to structure them to allow various exit points with appropriate awards such as a graduate certificate, graduate diploma, and Masters. A further important issue if the above were to be considered is the finding that suggested that in most universities, students doing a Masters by Coursework did not have access to the support and development programs offered to research candidates even when they were undertaking a research project (Kiley 2013). This is generally due to institutional organization where Honours and coursework degrees often come under the aegis of the Education portfolio, whereas research degrees often come under the aegis of the Research portfolio: an issue for further consideration.

Research Skills Development: Integrated with the Doctoral Program

As in the UK and New Zealand, and unlike in North America, Europe, and parts of Asia, Australia has traditionally not offered coursework in the PhD, whereas coursework has been a key feature of the professional doctorate introduced in the 1980s. One of the issues that is often raised as a negative impact of the US model of

coursework is that it can add substantial time to the doctoral candidature, while on the other hand proponents argue that it is likely to result in a more "all-rounded" graduate and may help the candidate progress more quickly (Humphrey et al. 2012).

However, the *Coursework in Australian Doctoral Education: What's Happening, Why, and Future Directions?* project (Kiley 2014) found that many Australian universities were introducing some form of coursework into the PhD. However, many chose not to use the term "coursework"; in fact, the term was, and still is, viewed somewhat negatively across the sector. In many cases coursework was associated with lectures and exams and "treating everyone the same." However, when restated as "structure," for example, a "structured program" or "structuring the learning environment," there was considerable support for the notion. Certainly a lesson for institutional administrators regarding introducing pedagogical changes to the entry pathways into the PhD, or the PhD program itself, would be to take great care with the language used to describe various activities and to avoid, where possible, the term coursework.

There are a number of examples of how opportunities are provided to develop research knowledge and skills within the PhD program. The first example is of formally "front-end" courses that require candidates to enroll and satisfactorily complete in order to continue. However, these courses address two quite different types of content. One focus is on courses related to research methods and design, writing a literature review, ethical research, and so on. The other focus tends to be on advanced disciplinary knowledge. For example, in some economics PhD programs, in order to give their graduates a competitive edge when applying for positions in multinational companies, candidates are provided with a broad disciplinary knowledge of microeconomics, macroeconomics, and econometrics as well as research skills. This advanced disciplinary knowledge is taught specifically at Australian Qualifications Framework (AQF) Level 9 (Masters) or 10 (Doctoral) and assessed accordingly (Australian Qualifications Framework 2013).

A second example is what in some cases is termed the integrated PhD, or the 4-year PhD. This option requires candidates, in the first year of candidature, to undertake courses relevant to their proposed research project including research methods, theory, scholarly writing, and related skills. However, unlike the US model, the universities in Australia adopting this approach involve candidates who already have a supervisor and who is working with the candidate with much of the work required in the courses related quite specifically to the PhD project, hence the term "integrated."

A third example, and one that is perhaps more common in the Australian context, is where universities offer a wide range of courses/workshops/seminars which are available to all candidates who choose, or who were advised, to take particular topics. In some cases candidates undertake a learning needs analysis/assessment (LNA) and then develop a learning plan to guide their choice (Gough and Denicolo 2007), and in others it is left quite flexible. Self-assessment tends to be the most common in this example or even a simple attendance record. However, there are some examples of the successfully completed work being assessed as part of the confirmation of candidate activity generally 9–12 months after commencement

(Ayers et al. 2016). A key consideration of this form of providing learning opportunities is the role of the supervisor. As outlined by Hinchcliffe et al. (2007) when reporting the UK experience of introducing workshops, courses, and additional learning activities for candidates, it appeared that supervisors could be quite active in dissuading candidates from attending such activities as they saw them as taking away from the key focus of the PhD, that is, getting the research done and written up.

A fourth example involves universities determining a total number of hours that a candidate has to spend on various learning experiences. There are a number of variations in this example with perhaps one which has gained popularity in Australia being the Strathclyde University model. Based around a Postgraduate Certificate in Research Professional Development (https://www.strath.ac.uk/researcherdevelopmentprogram), the argument is that to complete the certificate, there is little more required of the candidate other than what they would be doing anyway. Using the Vitae Researcher Development Framework (Vitae 2011), candidates are asked to undertake 60 h of work across the various areas of the framework, for example, *personal effectiveness* and *engagement*, *influence*, *and impact*. An example within the area of *engagement* might be for a candidate to take part as a volunteer or presenter in a science festival, an activity in which they might have been involved in anyway, but in this case, they have now reflected on their learning and gained recognition for their contribution. When a candidate considers that he/she has completed the requisite learning in a particular area, he/she writes a reflective essay on their learning experience, and this is forwarded to the research superior. Of particular note is that candidates have the length of candidature to complete the requirements and so they can undertake specific activities at the stages of candidature that best suit them and their learning.

If the various options outlined above were to be introduced into Australian universities, some of them would require serious consideration regarding staffing. Given it has not been the norm to have academic staff who are skilled, are interested, and have to time to conduct many formal courses such as "advanced qualitative research methods," the staffing issue is one that has to be given serious thought. In parts of Europe and the USA, it is common for academic staff to be recognized for their expertise in teaching various aspects of research, whereas this is not always the case in Australia.

Another consideration of possibly adopting a model where the research training is part of the PhD award relates to assessment. For example, is the coursework assessed and if so how and is the assessment part of the final examination? In the recent review of the Australian Research Training Scheme (McGagh et al. 2016), it was clear from the consultations that there was little support for the idea of separately assessing work undertaken in doctoral courses, not necessarily formal coursework. However, one possible argument is that the thesis and the overall breadth and depth of the research might be reduced, as, for example, in the professional/industrial doctorate. In these awards where the first year of study is formal coursework, it is understood that this work has reduced the time to undertake a project equivalent in word count to a PhD thesis. If some form of integrated PhD or PhD with coursework in the first year were to become the norm, then might it be expected that the maximum word count for a thesis might be reduced from 100,000 to perhaps 80,000 words?

Providing Broader Transferrable Skills

While preparing potential candidates with the desirable knowledge and skills to undertake a PhD in a successful and timely manner, as the discussion above indicates, another critical issue internationally is graduate employment. With relatively small percentages of graduates having any hope of a long-term academic position, increasing pressure is being placed on institutions to more effectively prepare them for employment outside the academy (McGagh et al. 2016).

Sometimes referred to as *transferrable skills* and on other occasions *employability skills*, these skills tend to relate to areas such as communication, project and time management, and working collaboratively.

One well-known example of addressing graduate employment is the UK Roberts Report (2002) which spawned many programs and workshops for candidates (Hinchcliffe et al. 2007). Other examples of the employability issue have been raised in publications such as McGagh et al. (2016), Group of Eight (2014), and DIISRT and DEEWR (2012).

The provision of these broader skills poses a number of challenges to institutional management. Unsurprisingly, one that is often raised is whether it is actually the role of universities to prepare doctoral candidates for future employment, followed by the issue of whether universities and academic staff are the most appropriate to assist with this preparation. However, accepting that with recent reports such as the ACOLA review (McGagh et al. 2016) that there is an expectation and that this is part of an institution's role, then the following questions arise: who to involve, how to develop and provide these skills, and when is the ideal stage of candidature for their development?

The "who" to involve is complicated given that in some disciplines, the mean age of candidates is mid- to late 30s and even mid-40s with candidates who have been, and probably still are, employed in demanding professional roles. Therefore, expecting all candidates to engage in various transferrable/employability skills activities might seem a little pointless. On the other hand, perhaps these candidates can be a partial answer to the question of who might facilitate this learning.

The Strathclyde University model outlined above provides suggestion on the "how" to develop these skills, and the ACOLA review (McGagh et al. 2016) provides a number of suggestions, particularly 6–8-week internships following thesis submission and while waiting for the examination results. Such an example is iPREPwa (http://www.waresearch.com/#!student-info/c849). In this collaborative project, the five Perth-based universities have engaged with industry to develop short, manageable projects which two or three candidates, generally from different disciplines, can engage with during their internship. Experience suggests that industry providers need assistance to develop meaningful and useful projects, an experience which is well documented by the Canadian Mitacs Accelerate program (McGagh et al. 2016).

Certainly an issue to be considered in the area of employability skills development and internships with industry is just what is meant by industry. In its narrow sense, it can be manufacturing, mining, and other operational aspects of industry. But in Australia the current use of the term can include arts, public service,

nongovernment organizations, and of course universities themselves. Not only do universities employ PhD graduates in academic positions, requiring teaching and well as research skills and knowledge, but they might also be employed as professional or administrative staff. A second consideration is the need to have institutional organization support for both candidates and industry.

Supervisor Development

With increased enrollments without necessarily a similar increase in staff numbers, and a growing emphasis on interdisciplinary research, it is likely that there will be a need for intuitions to reconsider supervisory arrangements and structures.

One model, based to some extent on the US experience, is an increase in cohort development through required preliminary coursework thereby delaying, to some extent, the specific role of the supervisor. A related issue is the popular use of panels of supervisors involving usually two and sometimes three supervisors for each candidate. A model, which might help to reduce the resource-intensive nature of this form of supervision, is to more actively support and encourage the use of groups, especially in the humanities and social sciences and with interdisciplinary research projects. In this way it might be possible to more effectively involve post-docs, peers, and others in the supervisory arrangements. Certainly any change to supervisory arrangements links directly to the following issue of supervisor development.

Given that there is to be an increase in the number of PhD candidates who start their research program and are ready to learn how to undertake research, rather than being able to do so almost immediately based on a rigorous Honours program, then it is highly likely that many supervisors are going to have to rethink the way they approach supervision and working with candidates. The research (see, e.g., Hinchcliffe et al. 2007) indicates that supervisor development programs will be critical in ensuring that supervisors fully understand the requirements of some enrolling students.

There are a number of issues that arise here for institutional administrators. For example, one question to be addressed is: who needs to be involved in providing such development? In some cases, university teaching and learning centers offer supervisor development programs; in others it is the graduate school or equivalent. Within these units, some have full-time staff with expertise in the area of doctoral education and supervision and for others they purchase online programs or contract outside consultants. In many cases the decision-making is influenced by the size of the institution.

A second question is: which supervisors are involved in development programs? In most cases, in Australia at least, universities expect academic staff new to research supervision to undertake some form of minimal induction. Others require a more substantial induction program, and others also require ongoing (annual, biennial, or triennial) updates. For institutions that have a number of off-campus supervisors, for example, in hospitals and research institutes, policies regarding the involvement of these supervisors can provide additional challenges.

A vexing question for many administrators related to supervisor development is whether such programs should be mandatory or not. Where programs are mandated, particularly where they require ongoing attendance and/or involvement, a particular administrative issue is the management and regular updating of registers and databases, especially where there are likely to be supervisors who are not actually employees of the institution.

A further issue concerns the content and provision of such development programs. Should they focus mainly on compliance issues, or be about "tips and tricks" for supervising, or address broader policy issues such as the issues addressed in this chapter? In terms of provision, many institutions provide a series of workshops, others an online course, and others, often as complementary to the workshops and online programs, provide support for discussion groups and communities of practice. Decisions as to the most appropriate approach depend to some extent on the type of university and overall views about development, its size, and the resources available to support more than minimal development opportunities for supervisors.

Conclusion

This chapter has addressed a range of key issues in doctoral education, although it has certainly not addressed all of them given the particular focus on commencing an Australian PhD. However, as a concluding issue and to move to the completion of a PhD, an issue that faces senior administrators is that no matter how institutions might change the doctoral experience, thesis examiners are likely to continue to examine, and hold as the benchmark, the traditional PhD thesis. Without changes at the end of the process, it is possible that changes at the beginning might be for nothing.

References

ACER. 2010. Workforce planning. In *ACER higher education update*. Melbourne: ACER.

ACOLA. 2012. *Career support for researchers: Understanding needs and developing a best practice approach*. Melbourne: Australian Council of Learned Academies.

Australian Qualifications Framework Council. 2013. *Australian qualifications framework*. Adelaide: Australian Qualifications Framework Council.

Ayers, Natasha, Margaret Kiley, Narelle Jones, and Martine Hawkins. 2016. Using learning plans to support doctoral candidate learning. *Innovations in Education and Teaching International*. https://doi.org/10.1080/14703297.296.123307.

Becher, Tony. 1994. The significance of disciplinary differences. *Studies in Higher Education* 19 (2): 151–160.

Denicolo, Patricia, Michael Fuller, Dianne Berry, and Carolyn Raven. 2010. *A review of graduate schools in the UK*. Lichfield: UK Council of Graduate Education.

DIISRT, and DEEWR. 2012. *Core skills for work: Draft framework for use in working session*. Department of Industry Innovation, Science, Research and Training, and Department of Education, Employment and Workplace Relations. Canberra

European Ministers of Education. 1999. The Bologna Declaration of 19 June 1999. Bologna. European Commission.

Gough, Martin, and Pam Denicolo. 2007. Research supervisors and the skills agenda: Learning needs analysis & personal development profiling. In *Issues in postgraduate education: Management, teaching and supervision*, ed. Alistair McCulloch. London: SRHE.

Group of Eight. 2013. The changing PhD: Discussion paper. Retrieved from Canberra: https://go8.edu.au/publication/discussion-paper-changing-phd.

Group of Eight. 2014. *Future demand for higher education in Australia*. Retrieved from https://www.go8.edu.au/publication/future-demand-higher-education-australia.

Hinchcliffe, R., T. Bromley, and S. Hutchinson. 2007. *Skills training in research degree programmes: Politics and practice*. Maidenhead: Open University Press and McGraw-Hill.

Humphrey, Robin, Neill Marshall, and Laura Leonardo. 2012. The impact of research training and research codes of practice on submission of doctoral degrees: An exploratory case study. *Higher Education Quarterly* 66 (1): 47–64.

Jorgensen, Thomas. 2012. The impact of international trends in doctoral education. UKCGE 3rd international conference on Professional Doctorates, EUI, Florence, 2–3 Apr 2012.

Kiley, Margaret. 2013. *I've done a coursework masters, now I'd like to do a doctorate: Can I? Final report*. Sydney: Office for Learning and Teaching.

Kiley, Margaret. 2014. *Coursework in Australian doctoral education: What's happening, why and future directions? Final report*. Sydney: Office for Learning and Teaching.

Kiley, Margaret, David Boud, Robert Cantwell, and Catherine Manathunga. 2009. *The role of honours in contemporary Australian higher education: Final report*. Sydney: Australian Learning and Teaching Council.

Kiley, Margaret, David Boud, Robert Cantwell, and Catherine Manathunga. 2011. Honouring the incomparable: Honours in Australian universities. *Higher Education* 62 (5): 619–633. https://doi.org/10.1007/s10734-011-9409-z.

Maldonado, Vicky, Richard Wiggers, and Christine Arnold. 2013. *So you want to earn a PhD? The attraction, realities and outcomes of pursuing a doctorate*. Toronto: Higher Education Quality Council of Ontario.

McGagh, J., Marsh, H., Western, M., Thomas, P., Hastings, A., Mihailova, M., Wenham, M. 2016. *Review of Australia's research training system: Final report*. Canberra: Australian Council of Learned Academies.

Min, Low Hui, and Abdul Rashid Mohamed. 2015. Exploring the research culture in an educational faculty in Malaysia. *Pertanika Journal of Social Science and Humanities* 23 (4): 809–826.

Palmer, Nigel, Helen Marsden, and Inger Mewburn. 2014. Profiling the new normal. *Proceedings of the 11th Biennial Quality in Postgraduate Research (QPR) conference*. Ed M. Picard and A. McCulloch. Adelaide. 9–11 April. 203.

Pearson, Margot, Terry Evans, and Peter Macauley. 2008. Growth and diversity in doctoral education: Assessing the Australian experience. *Higher Education* 55 (3): 357–372.

Roberts, S.G. 2002. *Set for success – The supply of people with science, technology, engineering and mathematics skills*. London: HM Treasury.

Trounson, Andrew. 2014. Overseas grad influence. *The Australian*. 15 Jan 2015, 25.

Trudgett, Michelle. 2014. Supervision provided to indigenous Australian doctoral students: A black and white issue. *Higher Education Research and Development* 33 (5): 1035–1048.

UNESCO Institute for Statistics. 2014. *Higher education in Asia: Expanding out, expanding up the rise of graduate education and university research*. Montréal: UNESCO Institute for Statistics.

Vitae. 2011. Researcher development framework. www.vitae.ac.uk/rdf.

Student Engagement in Postgraduate Education: Using Game Theory to Improve Results

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Contents

Abstract

This chapter demonstrates how game theory can be used as a tool to both develop and manage student engagement in higher education. Observations in this paper are applicable to undergraduate study but also more specifically in postgraduate programs that are offered via multiple delivery modes such as the MBA and which will

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involve coursework. Game theory is a novel approach in the management of higher education and provides significant benefits in designing programs to improve student engagement. The literature of student engagement is reviewed and the importance, methods of development, and management of student engagement in higher education is discussed at the various levels at which it is measured (the national, institutional, and individual teacher levels). The major concepts in game theory and how these are relevant to the classroom are discussed, including the concepts of the relevant "players," strategies, knowledge, and payoffs available to each player. The chapter then considers how redesigning the classroom changes the context of the game (e.g., changing the knowledge of the various players and/or payoffs) and how such changes can bring about changes in student engagement especially in postgraduate programs with online and/or blended delivery modes.

In order to illustrate the usefulness of this approach, three areas are examined in detail. Firstly, the treatment of students in on-campus, off-campus, and blended learning and the different implications for student engagement are considered. Secondly, the impact of using a game theoretical analysis on the evaluation of student evaluation of teaching (SET) scores and the implication for the management of teachers and the effect on student engagement are discussed. Finally, the effects of various assessment régimes on student engagement and how these might best be managed are considered.

Keywords

Postgraduate student engagement · Online and blended delivery · Student evaluation of teaching · Game theory

Student Engagement in Postgraduate Education: Using Game Theory to Improve Results

I never teach my pupils. I only attempt to provide the conditions in which they can learn. – attributed to Albert Einstein

Student engagement is an important aspect of both the quality of the program that is delivered to students, as well as student retention within the program (Angelopulo 2013; Dill and Beerkens 2012; Kurantowicz and Nizinska 2013; Nelson et al. 2011). All educational institutions, of whatever level, are concerned with student engagement. This concern has led to the development of a range of measures and rewards to encourage teaching staff and those responsible for providing the learning environment to improve student engagement. These incentives have been accompanied by a formidable set of rules and procedures; however, progress has not always been satisfactory. An important reason for this lack of success has been the "gaming" that has taken place in the classroom, both by students as well as by teachers. There is therefore a need to reexamine the problem of student engagement from the perspective of the theory of games.

Traditionally, engagement in higher education has been perceived as more of a responsibility of the student rather than the teacher (McMahon and Portelli 2004). While students in primary education faced disciplinary action for not performing to the expected standard of the class, students in higher education were largely left to their own resources with regard to engagement, with the lecturer providing the required materials to master the subject and the student expected to take responsibility for learning (Zyngier 2008). This set of beliefs is well illustrated by the quotation at the beginning of this chapter.

Literature Review of Student Engagement in Higher Education: What We Already Know

Kuh et al. (2007) summarize the usual meaning of the term "student engagement" when they state that:

> Student engagement represents two critical features. The first is the amount of time and effort students put into their studies and other educationally purposeful activities. The second component of student engagement is how the institution deploys its resources and organizes the curriculum, other learning opportunities, and support services to induce students to participate in activities that lead to the experiences and desired outcomes such as persistence, satisfaction, learning, and graduation. (Kuh et al. 2007, p. 44)

Starting in the 1950s, student engagement came to be seen as a joint responsibility of the individual academic, the University, and the student. The reasons for the lack of engagement began to be investigated, and methods to remediate any problems began to be suggested. At the same time, an era of accountability for universities began to emerge – with some referring to this as an age of "centralization, bureaucratization, and commodification" of universities (Tuchman 2009). Regardless of whether this change was seen as desirable or not, student engagement began to be monitored, measured, and eventually managed – a trend that continues to the present day.

While student engagement is a rather broad term with a range of possible interpretations, according to the different perspectives from which it is viewed, this chapter focuses on the interaction between student evaluation of teaching and pedagogical strategies aimed at engaging students that are particularly relevant for MBA and similar masters-level degree programs offered in off-campus and/or blended learning modes. It is important to explore this interaction because firstly, it helps to explain how pedagogical strategies tend to "adapt" to meet different student expectations under different learning modes and, secondly, it offers an insight into the vexed issue of the gap that emerges between the quality of learning achieved and the student evaluation of teaching. Many of the problems associated with student evaluation of teaching have already been addressed at length in the extant literature (Leckey and Neill 2001; McGettrick 2005; Schuck et al. 2008; Valsan and Sproule 2008). We, for the first time, explore the interactions between student evaluation of teaching and pedagogical strategies through the

methodological lens of "game theory." Game theory is an apt conceptual tool for this purpose as it offers a formally established model of interaction between utility-maximizing agents that has been applied successfully in a wide variety of disciplines ranging from international diplomacy to evolutionary biology. For the benefit of the general reader, we present a brief introduction to the basics of game theory in a subsequent section of this chapter, prior to applying this tool as a methodological lens in the specific context of our problem.

Measuring and Assessing Student Engagement and the Use of Student Evaluation of Teaching (SET) Measures

Student engagement is inherently difficult to assess. An earlier summary of this literature can be found in Quaye and Harper (1970). The most popular indicators of engagement have been based on directly asking students about their level of engagement, often in the form of a questionnaire. This has been done both at the level of the individual institution as well as at the national level.

Measuring Student Engagement at the National Level

The use of public funds is normally subject to scrutiny; this applies equally to the funding of higher education where there are continuing attempts to measure student engagement. There are usually two major objectives of such programs: accessing the changes in engagement at a national level and comparing the level of engagement between various teaching bodies so that successful program can be propagated. The National Survey of Student Engagement (NSSE) provides indicators of student engagement across universities in the USA and Canada. The survey covers colleges and universities that span all eight of the Carnegie classifications (www.camegieclassifications.iu.edu). The survey is based on a consideration of four major themes that relate to the environment that students experience in higher education. These themes are academic challenge, learning with peers, experiences with faculty, and campus environment. The associated indicators have been tested over a multiyear period and are considered to provide good-quality information about each aspect of engagement. Table 1 describes these themes and their respective indicators.

Similar work has also been undertaken in the UK, where the Higher Education Funding Council for England (*hefce*) publishes the National Student Survey on an annual basis (http://www.hefce.ac.uk/lt/nss/). The *hefce* reports increasing level of satisfaction among students in 2015, especially with regard to assessment and feedback. Many other countries produce similar reports. In Australia the Department of Education and Training has recently re-badged these reporting activities as Quality Indicators for Learning and Teaching (QILT) (http://www.qilt.edu.au) which includes the "Student Experience Survey."

Table 1 NSSE themes and indicators for student engagement

Theme	Indicator
Academic challenge	Higher-order learning
	Reflective and integrative learning
	Learning strategies
Learning with peers	Collaborative learning
	Discussions with diverse others
Experiences with faculty	Student-faculty interaction
	Effective teaching practices
Campus environment	Quality of interactions
	Supportive environment

Source: http://nsse.indiana.edu/NSSE_2015_Results/pdf/NSSE_2015_Annual_Results.pdf#page=12

Overall these measurements display not only the improvement in student engagement over time, but more importantly, the desire to continue to improve this important aspect of education.

Measuring Student Engagement at the Institutional Level

In formulating a new approach to remediate student engagement, institutions of higher education asked their students directly about their attitudes toward the various teachers, the course material, the manner in which the material was presented to them, and so forth in order to capture data on student evaluation of teaching (hereafter SET). While there is some controversy in the use of SET scores (Felton et al. 2004), studies have shown a strong positive link between student performances and SET scores. For example, Stehle et al. (2012) evaluated SET with three measures: (i) overall instructor quality, (ii) overall course quality, and (iii) student's subjective learning. They found that the mean value of examination scores (as a measure of students' performances) bears a significantly high positive correlation with the mean SET score. These results seem to suggest that a higher mean SET score implies better teaching and engagement, which is subsequently reflected in the students' academic performance.

Institutions of higher education almost universally use SET data in the performance evaluation of teachers in terms of tenure, promotion, and salary rise decisions (Chen and Hoshower 2003). Attempts to improve student engagement by using SET have met with varying degrees of success (Culver 2010; Ituma 2011; Oliver et al. 2008). However, because of the implications for career prospects, SET can make individual teachers behave strategically while choosing the level of intensity or difficulty at which each class is taught. In other words, teachers, as rational, individual utility-maximizing agents, could, as a matter of personal career strategy, "modulate" the type of classroom practice so as to maximize the chance of high teaching evaluation scores, which may or may not improve the quality of learning.

Thus one of the important problems that arise in this context is that the quality of teaching and the SET can both potentially be the subject of gaming, driven by a perception of conflicting interests, which in turn can lead to outcomes that are unintended at best and perverse at worst (Haskell 1998; Johnson 2010; Schuck et al. 2008; Zabaleta 2007). It is important to note that we are talking about two mutually exclusive entities (the lecturer and the student), both of whom are expected to operate within some preestablished rules of conduct to achieve the overt objective of effective knowledge dissemination. However, there may very well be underlying latent objectives that are unique to each entity, which can ultimately decide the outcome of their interaction. Game theory offers a formal model to study the different ways in which two or more utility-maximizing agents can interact in a way that affect not only themselves but all other parties in the game. Therefore, it is an apt choice of methodological lens in the context of our problem. A brief introduction to the fundamentals of game theory is presented in the next section.

A Gentle (i.e., Non-mathematical) Introduction to Game Theory

Game theory is concerned with the incentives, possible actions (and reactions) of participants, and the information that is available to each party. The theory provides a formal method that is useful in examining interactions that occur where cooperation or conflict exists. The use of game theory in the education literature has largely been confined to education policy (Law and Pan 2009; Niklasson 1996). This chapter extends that work into the classroom. While game theory can be viewed as a branch of applied mathematics, the usefulness of game theory in the academic/student dyad requires no formal knowledge of the mathematics of game theory (nor are any formal proofs presented, or required, to follow the arguments presented). Rather the discussion focuses on how educational policy on engagement can be formulated to meet the challenges faced in the classroom and to ensure that both students and academics are able to benefit from such policies.

Student Engagement from the Perspective of Game Theory

In a "game" each player has a choice of strategies (possible courses of action). The players choose the strategy that will result in the greatest payoff for themselves, given the information available to the player at the time the choice is made. To understand the actions of each player, it is necessary to consider the strategies, payoffs, and information available to each player. Once the game has been analyzed, it may be possible to change the outcome of a particular game by influencing these variables. Applying game theory in the context of higher education yields many promising results. This section of the chapter introduces the major elements that are required to use game theory and illustrates each element by placing the game in a classroom setting. The following sections then develop the results

of the games that are specifically concerned with student engagement and that are typically played out in the classroom.

The elements required for a game to exist are as follows.

The Players

In the simplest of games, there are only two players (e.g., the most well-known of all games consists of two people) were asked to decide who will confess to a crime in order to receive a reduced sentence, usually called the "prisoners' dilemma" (Poundstone 1970). In the classroom the simplest games would comprise the teacher and a representative student, which is the same as stating that all students are exactly similar in terms of the game. In more complicated games, it is possible to include multiple groups of students. The decision to expand the game to include subgroups of students would be based on how, and why, each subgroup of students reacts in a different manner to the actions of the teacher, and how the outcomes of one subgroup affect other subgroups in the class. The additional complexity of having more than one group of students might be easily outweighed if the groups are considerable different in character. The manner in which outcomes are different in three different groups of students (on-campus, off-campus, and blended) is described later in this chapter.

Strategies Available to the Players

If only one course of action (strategy) is available to a player, then that player's actions are completely determined, and they can no longer be conceived of as a "player" in the game. Thus if there are only two players (teacher, student) and one player has only one possible course of action, the game is reduced to a simple deterministic outcome. This is the basis under which much of the analysis of student engagement has thus far been conducted. The possible strategies available to both teachers and students are thus worthy of study if game theory is to be usefully employed. Let us consider these in turn.

University teachers in higher education may adopt a set of strategies, many of which will affect the relationship with students and enhance (or degrade) student engagement. Consider the following strategies that a teacher might adopt:

- Setting the standard of work to be mastered in order to pass the course
- Constructing the syllabus to serve a particular objective (research, application, etc.)
- Requiring independent learning by the students
- Minimizing contact with students in order to achieve other personal objectives (research publications, etc.)
- Maximizing SET scores and promotion opportunities

Many of these strategies might seem contradictory in that they may have different rewards for the academic (see the following section) and may have different effects

on students. In particular, the strategy chosen by the academic may have varying effects on the level of student engagement. At this point in the analysis, it is not clear which combination of strategies the teacher will choose. Both the payoffs from the expected outcome and the reaction of students to the chosen strategy need to be considered; this is the exact purpose for which game theory was developed.

Students too have numerous strategies (choices) available to them, some of which are:

- The amount of time and/or effort that they will devote to the course of study
- The schedule of when effort will be expended (e.g., throughout the course, mostly toward the time of the examination, etc.)
- The volume of outside reading or independent work to be done (or, in contrast, the amount of "spoon-feeding" expected from the teacher)
- To focus only on those parts of the course that result in grading outcomes
- Cutting corners/cheating
- Rewarding or punishing lecturers by means of artificial SET scores

The Costs and Benefits Available to Each Player (the Payoffs)

The incentive for each player may well be idiosyncratic. Hence it is not possible, or desirable, to assign numerical values to these. Since the objective of the analysis is often to change behavior in some manner, usually all that is required is to have knowledge of the marginal effects – either from observation or the theory of behavior. Such information is almost always available.

Knowledge Available to Each Player

Finally, it is important to understand what knowledge of the game each player possesses when forming his or her strategy. In the games that take place in the classroom, it may not be unrealistic to assume that all players have knowledge of the game itself and the possible strategies that the other parties can choose – this situation is generally referred to as "common knowledge" in the game theoretic literature. In what follows we will therefore consider that all players are aware of their own possible strategies, the possible strategies of the other players, and the payoff of each strategy. It is possible to consider more complex situations, but they add little additional insight in the present context.

Redesigning the Classroom for Better Student Engagement

The appeal of game theory as a form of analysis is that it allows games to be redesigned to achieve better social returns. Many situations do not require detailed knowledge of the mathematical formulations of games in order to understand how to construct policy to change the existing outcome; these situations may be thought of

as simple games, where the choice of action by one party is invariant to the actions of the other party (technically these are known as "dominant strategies" in the literature). Where a dominant strategy exists, changing the outcome may be as simple as changing the costs or benefits to one or more parties. Even in these situations, game theory is useful because it can validate our formulation of the problem and can be adapted if the structure of the game changes in the future.

In the following section, three different situations that affect student engagement and where there is not a dominant strategy are analyzed. The lack of a dominant strategy means that each player's choice of action affects the other player(s), and a choice must be made without knowing what the other player(s) will do. Games of this type are called "normal form games," but the analysis of the outcome of such games is not necessarily convoluted (although at times it may be necessary to seek expert advice!). In particular, this chapter focuses on the problem of student engagement in three different scenarios: the type of class instruction (on-campus, off-campus, and blended learning), ethical problems in the use of SET, and the assessment of students' progress.

On-Campus Classes, Off-Campus Classes, and Blended Learning

Many lecturers in higher education who have taught the same class over a number of years have experienced unexpected differences between cohorts of students. This issue becomes particularly prominent when a cohort is noticed to have a significant percentage of students who view themselves as "misfits" and may even be regretting their decision to enroll in a postgraduate program of study and are therefore typically at risk of underperformance and lack of an engaging experience (Morrison et al. 2003). Noticed differences in cohort composition may necessitate changes in teaching practices as a particular class progresses over the semester. When students are divided into separate on-campus and off-campus groups, such differentiation can lead to the differences in cohorts becoming even more pronounced. The relevant literature is replete with empirical analysis of the comparative effectiveness of these alternative modes of teaching in relation to students' performances (Bourne 1998; Graham 2006; Morrison et al. 2003). However, it is not yet clear when (or why) each of these modes of teaching may perform better than the other. Confounding matters even more, some studies have found no significant difference to exist between the modes of delivery in relation to students' performances (Tiantong and Arreeraad 2013).

It is possible to use a game theoretic approach to analyze the effect of alternative modes of teaching (on-campus, off-campus, and blended modes) on student engagement and ultimately on student evaluation of teaching – however, an additional element has to be introduced into the game setting. In addition to the teacher and students (players), the various strategies, and the payoffs for each player, *information asymmetry* may exist. Information asymmetry implies that there is less than perfect communication between the teacher and the students as to the possible strategies available and payoffs of the other player (thus removing the assumption of common knowledge introduced earlier). Furthermore, given the relative costs of

communication, the information asymmetry is assumed to be greater in the off-campus mode than for blended learning and least in the on-campus class.

As an example, consider that there is an asymmetry of information about the level of comprehension that the lecturer expects to students to attain in order to successfully complete the unit of study. The lecturer will not be immediately aware of students' willingness to devote effort to learning but will make adjustments over time (Peacock 2001). Such adjustments will depend on the teacher's possible strategies and payoffs and *may* include, for example, incentivizing students (changing the payoffs) to encourage students to work harder. As a consequence, in the presence of information asymmetry, over time an on-campus class will lead to a better match between teaching intensity and the effort that students are prepared to devote to learning. The off-campus class would then adjust at a slower rate, if at all, particularly so if it is composed of mostly mature-age students as is typically the case in postgraduate programs that are offered via distance and/or blended modes.

As desirable as an ultimate convergence of expectations of widely varying student cohorts and teaching intensity might be from a social perspective, there is nothing in the setting of this game to ensure that this is what will invariably occur. The teacher might in fact be more motivated to lower standards (i.e., teaching intensity) than to increase the payoff for students to work harder – particularly so for mature-age, postgraduate students who have other more pressing priorities apart from studies. Alternatively, the lecturer might not receive the signal that requested less work from the off-campus class and paradoxically deliver the course at a higher standard than he or she might otherwise have done! In fact, it is possible to show the somewhat counterintuitive result that by "matching" the learning effort demanded by students, the lecturer will (under specific circumstances) produce less than optimal results but that this outcome is by no means always the case.

The value of this example is to demonstrate that simplistic rules to regulate teaching of postgraduate classes in particular with different student characteristics (and hence expectations) are often impossible to formulate and an effort to do so may cause serious harm to both students and teachers. Simply insisting on an increase in effort on the part of students to match preconceived standards is not always optimal. By considering the problem in a game theoretic setting and by forcing an analysis of ALL the factors at play, administrators have a greater chance of delivering a practical outcome that is the most optimal for all involved and will stay optimal under most scenarios.

Grade Inflation, Ethics, and Student Engagement

Although the SET is a valuable source of information that is useful in the management of an academic department, it is subject to gaming by both students and academics alike (Valsan and Sproule 2008). The resulting ethical issues have been difficult for the academy and its members to address, and there is little published research in this area. However, the studies that have been published describe an attempt to quantify the problem. Reis and Klotz (2011) point to the seriousness of the problem: *However, anecdotal evidence supports the notion for a potential loss of academic integrity*

amongst academic teaching staff especially when soft marking and grade inflation are employed as techniques to improve SET as part of performance reviews. Reis and Klotz examine the dilemma from the perspective of nursing education, by using an ethical principles framework. This approach to ethics is commonly used in health-care education and involves examining a dilemma in terms of the effect each proposed solution has on a set of ethical principles. As an example of such a framework (Beauchamp and Childress 2001) would suggest the following aspects be examined:

- Respect for autonomy
- Beneficence
- Non-maleficence
- Justice

In considering that SET may contribute to grade inflation, Reis and Klotz (2011) suggest that a conscientious educator of professionals faces "an unpalatable choice" between:

1. *Refusing to compromise teaching standards by indulging in grade inflation or other tactics, and accepting the consequence of receiving relatively low SET scores that can impact negatively upon their career*
2. *Maximizing their teaching evaluations by compromising their professional standards to the extent of watering down course content, lowering academic course requirements, or implementing grade inflation, thereby compromising the long-term professional development of students and helping to qualify nurses who possibly are not fit to practice*

These are the strategies that the educator may choose between. In terms of an ethical principles framework, the dilemma is resolved by examining each action in terms of the relevant set of ethical considerations. Reis and Klotz suggest using the items discussed by Beauchamp and Childress (as discussed above) although other frameworks might be more appropriate.

In terms of game theory, by setting up the game so that undesirable outcomes are no longer attractive to the player, such outcomes may be more easily avoided. The trick is to find the correct way to set up the game. The result, which is not unexpected, is to use the SET as a voluntary instrument for teachers to increase the quality of their teaching rather than as an instrument to judge their performance in the classroom, particularly in the context of postgraduate programs that are offered via multiple modes of delivery. The fact that the same conclusion is derived whichever approach of analysis is used, demonstrates the overall robustness of this conclusion.

There appears to be no literature that discusses the use of SET by students in terms of game theory. However Clayson et al. (2006) are able to demonstrate the strong relationship between students' expectations of high grades with higher SETs, stating that "After 10 weeks of exposure to an instructor, students continued to change their evaluations systematically with changes in their expected grades," thus demonstrating a significant implied threat by students, i.e., a strong signal to

teachers. Controversially Clayson et al. conclude that "The results of our study strongly suggest that instructors can 'buy' evaluations with grades" (p. 64) which leads to a consideration of the strategy that will be chosen by teachers.

Using the lens of game theory, all of the following are solutions that might be suitable for administrators. Each solution changes the outcome, usually be changing the payoffs:

- Replacing SET with third-party measures of student learning (Armstrong 1998)
- Less reliance on SET for promotion and other professional advancement
- Some form of statistical norming of the SET results that results in a reasonable estimate of the effect on students (Greenwald and Gillmore 1997)
- Frequent measurement of SET in a given class to remove any timing biases and to reduce manipulation

Assessment and Student Engagement

Assessment continues to be both a requirement in higher education (for without it certification carries little meaning) as well as one of the major sources of discontent among students (Clouder 2012). The National Student Survey (NSS) in the UK shows general dissatisfaction with assessment and feedback by students. Nevertheless, there are ways in which the discontent of students may be ameliorated. Applying the principles of game theory described above and viewing the game from the students' perspective, it is possible to change the game in the following ways.

Payoffs can be changed by reducing risk to the student, for example, by having multiple assessments over the course of the semester, with timeous and useful feedback on improving performance throughout the course. An additional measure might be to circulate past assessments (or constructing pro forma assessments where courses are not yet well established). For example, a renowned finance academic posts the following message on his blog site for students:

> *Past quizzes and exams: I have included just about every quiz I have ever given in my corporate finance classes below. The solutions are also available. Enjoy!!!!* (Source: http://pages.stern.nyu.edu/~adamodar/, papers from 1986 to 2014 are available)

Player strategies can be enhanced by allowing students some form of control over the timing of feedback on teaching and the release of final results. An example that one of the authors experienced as a student was being allowed to not take a final examination provided a sufficiently high grade-point average was achieved over the semester. Being aware of his performance throughout the semester (and thus being confident that a final examination will not impact his overall result given that the cut-off grade-point was achieved) offered a "degree of dissociation" between performance and evaluation of teaching that may not have been achieved if he had to compulsorily sit the final examination.

Conclusion

Game theory is no longer an esoteric field of research and has proven to be useful in many practical applications. The classroom often presents an environment in which the players are able to make strategic decisions, and in order to understand and manage the outcomes of such a process game theory is invaluable. Fortunately, it is not necessary to formulate many of these situations in purely mathematical terms for useful conclusion to be drawn and for policy to be formulated. This chapter illustrates how greater student engagement, especially in MBA and other similar postgraduate study programs that are typically offered in flexible and blended learning modes, may be achieved by using game theory. Other classroom conundrums that are particularly relevant for postgraduate education (e.g., peer assessment of group assignments) can also be ameliorated by in-depth analytical exploration via the methodological lens of game theory, and based on the findings from such explorations, the management of higher education may be further enhanced, but we leave this issue for future research.

References

Angelopulo, G. 2013. The drivers of student enrolment and retention: A stakeholder perception analysis in higher education. *Perspectives in Education* 31 (1): 49–65.

Armstrong, S.J. 1998. Are student ratings of instruction useful? *American Psychologist* 53 (11): 1223–1224. Retrieved from http://doi.apa.org/getdoi.cfm?doi=10.1037/0003-066X.53.11.1223.

Beauchamp, T.L., and J.F. Childress. 2001. *Principles of biomedical ethics*. New York: Oxford University Press.

Bonk, C.J., and C.R. Graham. 2006. *The handbook of blended learning: Global perspectives, local designs*. San Francisco: Pfeiffer.

Bourne, J.R. 1998. Net-learning: Strategies for on-campus and off-campus network-enabled learning. *Journal of Asynchronous Learning* 2(2): 70–88.

Chen, Y., and L.B. Hoshower. 2003. Student evaluation of teaching effectiveness: An assessment of student perception and motivation. *Assessment & Evaluation in Higher Education* 28 (1): 71–88.

Clayson, D.E., T.F. Frost, and M. Sheffet. 2006. Grades and the student evaluation of instruction: A test of the reciprocity effect. *Academy of Management Learning & Education* 5 (1): 52–65.

Clouder, D.L. 2012. *Improving student engagement and development through assessment: Theory and practice in higher education*. London: Routledge.

Culver, S. 2010. Course grades, quality of student engagement, and students' evaluation of instructor. *International Journal of Teaching and Learning in Higher Education* 22 (3): 331–336.

Dill, D.D., and M. Beerkens. 2012. Designing the framework conditions for assuring academic standards: Lessons learned about professional, market, and government regulation of academic quality. *Higher Education* 65 (3): 341–357. Retrieved from http://link.springer.com/article/10.1007/s10734-012-9548-x.

Felton, J., J. Mitchell, and M. Stinson. 2004. Web-based student evaluations of professors: The relations between perceived quality, easiness and sexiness. *Assessment & Evaluation in Higher Education* 29 (1): 91–108.

Greenwald, A.G., and G.M. Gillmore. 1997. Grading leniency is a removable contaminant of student ratings. *The American Psychologist* 52 (11): 1209–1216. discussion 1216–1217.

Haskell, R.E. 1998. Academic freedom, tenure, and student evaluation of faculty: Galloping polls in the 21st century. Retrieved from http://ericae.net/digests/tm9809.htm.

Ituma, A. 2011. An evaluation of students' perceptions and engagement with E-learning components in a campus based university. *Active Learning in Higher Education* 12 (1): 57–68.

Johnson, R. 2010. The authority of the student evaluation questionnaire. *Teaching in Higher Education* 5 (4): 419–434.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., Hayek, J. C. (2007). Piecing together the student success puzzle: Research, propositions, and recommendations. ASHE Higher Education Report, volume 32, number 5. ASHE Higher Education Report, *32*(5), 1–182.

Kurantowicz, E., and A. Nizinska. 2013. How students "Stay the Course": Retention practices in higher education. *Studies in the Education of Adults* 45 (2): 135–147. Retrieved from eric.

Law, W.-W., and S.-Y. Pan. 2009. Game theory and educational policy: Private education legislation in China. *International Journal of Educational Development* 29 (3): 227–240.

Leckey, J., and N. Neill. 2001. Quantifying quality: The importance of student feedback. *Quality in Higher Education* 7 (1): 19–32.

McGettrick, B. 2005. Towards a framework of professional teaching standards: A response to the consultative document "Towards a Framework for Professional Teaching Standards." Retrieved from http://escalate.ac.uk/downloads/2044.pdf.

McMahon, B., and J. Portelli. 2004. Engagement for what? Beyond popular discourses of student engagement. *Leadership and Policy in Schools* 3 (1): 59–76.

Morrison, M., A. Sweeney, and T. Heffernan. 2003. Learning styles of on-campus and off-campus marketing students: The challenge for marketing educators. *Journal of Marketing Education* 25 (3): 208–217.

Nelson, K.J., C. Quinn, A. Marrington, and J.A. Clarke. 2011. Good practice for enhancing the engagement and success of commencing students. *Higher Education* 63 (1): 83–96. Retrieved from http://link.springer.com/article/10.1007/s10734-011-9426-y.

Niklasson, L. 1996. Game-like regulation of universities: Will the new regulatory framework for higher education in Sweden work? *Higher Education* 32 (3): 267–282. Retrieved from http://link.springer.com/article/10.1007/BF00138867.

Oliver, B., B. Tucker, R. Gupta, and S. Yeo. 2008. eVALUate: An evaluation instrument for measuring students' perceptions of their engagement and learning outcomes. *Assessment & Evaluation in Higher Education* 33 (6): 619–630. Retrieved from eric.

Peacock, M. 2001. Match or mismatch? Learning styles and teaching styles in EFL. *International Journal of Applied Linguistics* 11 (1): 1–20.

Poundstone, W. 1970. *Prisoner's dilemma*. New York: Anchor Books.

Quaye, S., and S.R. Harper. 1970. *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. 2nd ed. Hoboken: Taylor and Francis.

Reis, J. and J. Klotz. 2011. *The road to loss of academic integrity is littered with SET: A hypothetical dilemma*. Paper presented at the 5th Asia Pacific Conference on Educational Integrity, University of Western Australia, Australia.

Schuck, S., S. Gordon, and J. Buchanan. 2008. What are we missing here? Problematising wisdoms on teaching quality and professionalism in higher education. *Teaching in Higher Education* 13 (5): 537–547.

Stehle, S., B. Spinath, and M. Kadmon. 2012. Measuring teaching effectiveness: Correspondence between students' evaluations of teaching and different measures of student learning. *Research in Higher Education* 53 (8): 888–904.

Tiantong, M., and W. Arreeraad. 2013. The comparison of the learning achievements using the online and offline LADS (Learning Activities of Data Structure Course) models. *Journal of Education and Practice* 4 (4): 79–87.

Tuchman, G., (2009). Wannabe U : Inside the corporate university. Chicago: The University of Chicago Press.

Valsan, C. and R. Sproule. 2008. The invisible hands behind the student evaluation of teaching: The rise of the new managerial elite in the governance of higher education. *Journal of Economic Issues*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/00213624.2008.11507197.

Zabaleta, F. 2007. The use and misuse of student evaluations of teaching. *Teaching in Higher Education* 12 (1): 55–76.

Zyngier, D. 2008. (Re)conceptualising student engagement: Doing education not doing time. *Teaching and Teacher Education* 24 (7): 1765–1776.

Post-Monolingual Research Methodology: Building Multilingual Postgraduate Researchers' Capabilities for Theorizing

16

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Contents

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Abstract

Through exploring the rationale and practices for building multilingual researchers' capabilities for theorizing, the purpose of this chapter is to review research which provides an introduction to post-monolingual research methodology (Singh *Australian Journal of Education* 54(1):31–45, 2010; Worldly critical theorizing in Euro-American centered teacher education? in X. Zhu & K. Zeichner (Eds.), *Preparing teachers for the 21st century* (pp. 141–169). Heidelberg: Springer, 2013). Methodologically, "divergence in theorizing" provides the overriding conceptual framework for this chapter, extending and deepening conceptual advances made in previous research (Singh *Globalisation, Societies and Education* 7(2):185–201, 2009; 2011). Accordingly, this chapter begins by exploring the relationship between theory, theorizing, and divergence in theorizing. Research findings indicate that the case for postgraduates capitalizing on their multiple languages to incorporate theorizing in their research can be grounded in arguments relating to trans-languaging, creativity, education, academic freedom, employability, history, and democracy. After considering the criteria for accepting divergence in theorizing, attention then turns to educational strategies for building multilingual researchers' capabilities for theorizing. Practically, deepening multilingual postgraduate researchers' capabilities for theorizing can involve a range of strategies: creative impetus, contextualizing, connecting, conceptualizing, contesting, and challenging. Further research which contributes to learning transformations are warranted in the light of critiques of English-only monolingual pedagogies and theories. Multilingual researchers, university managers, and higher education policy-makers will benefit from knowledge of strategies for incorporating theoretic-linguistic resources for divergent intellectual cultures in postgraduate education. The chapter brings together the concepts of post-monolingual research methodology and divergence in theorizing to reconfigure the epistemological basis for making an original contribution to knowledge in postgraduate education.

Keywords

Capabilities · Divergence in theorizing · Post-monolingual research methodology · Linguistic repertoire · Multilingual postgraduate researchers · Theoretic-linguistic tools · Theorizing · Theory

Introduction

Post-monolingual research methodology refers to (a) the use of the divergences between two or more languages to undertake theorizing (b) in coexistence with the tensions posed by English-only monolingualism (Singh 2013). In other words, the emphasis is on exploring the divergence between languages to open up new paths for theorizing, rather than focusing on solely concerns about testing existing theories (Jullien 2014). Despite their internationalization, or because of it,

Anglophone universities continue to be informed by monolingual ideologies that marginalize multilingual postgraduates' capabilities for exploring divergence in theorizing (Bondy 2016). Working with this tension, this chapter addresses the work of post-monolingual research methodology in deepening multilingual postgraduates' capabilities for theorizing and to create scholarly spaces that extends divergence in theorizing. In doing so, this chapter contributes to changing postgraduate education with multidirectional shifts in transnational knowledge production (Singh et al. 2013).

Much attention is given to building a range of capabilities in postgraduate researchers (Akuffo et al. 2014; Colenbrander et al. 2015; Kabiru et al. 2014). However, little attention is given to building their capabilities for theorizing (Biesta et al. 2011; Swedberg 2016). Moreover, considerably much less attention was given to building postgraduate researchers' capabilities for theorizing using the concepts, metaphors, and images available in their full linguistic repertoire (Singh 2011a, 2013). Post-monolingual research methodology deals with the challenges of multilingual postgraduate researchers making meaning of phenomena in interculturally divergent ways (Jullien 2014). The multilingual postgraduates that drive the research reviewed in this chapter are those characterized as having postimperial, postcolonial, or post-cold war characteristics.

Over the decades, scholars from the humanities, arts, and social sciences (HASS) have been reassessing the work of theorizing in relation to the rising generation of multilingual postgraduates (Keim et al. 2016). Critiques of HASS have questioned its homogenizing reproduction English language theories (Akena 2012; Canagarajah 2002; Grosfoguel 2013; Harper 2011; Preece 2011; Singh 2013). Post-monolingual research methodology directs attention to what is theorized in English and what is not theorized through postgraduate researchers' other languages. Postgraduate researchers' multiple languages contain concepts, metaphors, and images that bear meanings developed through theorizing. Through a review of the literature, this chapter provides a guide for multilingual postgraduate researchers and academics seeking an introduction to post-monolingual research methodology and divergence in theorizing.

Several caveats are worth noting here. First, the aim of post-monolingual research methodology is to verify the presupposition that all human languages are equally capable of being used for theorizing. However, divergence in theorizing does not mean the "negation or denial of Euro-American [theorising] but rather it allows us to treat this Western body of knowledge" (Anderson 2014: 448) as one intellectual resource to be developed and tested along with many others. In other words, this is not a matter of Euro-American education "reducing the claims of its own values or by moderating its commitment to the, or even by 'relativising' its positions" (Jullien 2014: 140). Second, this methodology embraces intellectual innovations made possible by divergences in the expression of concepts, metaphors, and images across intellectual cultures. It is not the "origin" of these ideas in one or other intellectual culture that is at issue here. Nor is the focus is on why knowledge developed in one culture is not elaborated therein but advanced by another (Belting 2011). Third, as part of learning to theorize across languages,

multilingual postgraduates have to struggle against ethno-relativism and nativism. Sinocentrism is not the answer to Eurocentrism in postgraduate education (Prazniak 2010). It is misguided to assume that all efforts at divergence in theorizing will necessarily generate theoretic-linguistic tools that are as helpful as existing theories (Makarychev and Morozov 2013). Fourth, this methodology is not concerned with capturing the "voice" of postgraduate researchers as such (Helms-Park and Stapleton 2003; Moore and Muller 1999; Young 2000). Voice is not as important as is the capabilities multilingual postgraduates have for theorizing in their scholarly arguments (Fielding 2007; Fulford 2009; Young 2009).

Theory, Theorizing, and Divergence in Theorizing

To begin, there is need to consider the roles theory and theorizing can play in the education of postgraduate researchers. Accordingly, this section gives a brief overview of theory and theorizing, providing initial definition of both. As will be seen, the relationship between theory and theorizing can be approached from various perspectives. By establishing what theory and theorizing might be regarded as, consideration then turns divergence in theorizing.

Theory

The meaning of theory is contested, with rational disagreements about what a theory is supposed to be or ought to do. Definitions of theory vary across HASS disciplines and among researchers (Biesta et al. 2011; Clegg 2012). For Lemert (1993), a theory is a critically mindful, plausible, and coherent description of an important social phenomenon, which provides a persuasive explanation of how and why it might be dealt with. The independent thinking it requires is made possible by academic freedom. Theory can include a summary of observations, mathematical formulae, references to what the classics say, and new speculations (Markovsky 2008). Further, conceptual frameworks, principles, and models are among the various tools used by researchers to express theory (Weick 1995). Rather than validating what they already believe, theory provides researchers a lens through which the study of phenomenon may reveal significant, unexpected, or surprising advances in knowledge (Swedberg 2016). Practically, theories provide "vital insights that . . . make sense of the world . . . and serve as a guide to action" (Sears 2005: 10). Theories are indispensable in daily life as they are for research.

A theory subtly explains why acts, events, structures, and thoughts happen in the ways the available evidence indicates that they might. In this sense, theory is used to answer to queries about the why of phenomenon. By delving into underlying processes, theory provides a way "to understand the systematic reasons for a particular occurrence or non-occurrence" (Sutton and Staw 1995: 378). As part of

a systematic investigation, theory provides explanations and justifications about the associations among phenomena.

While there is perhaps less scholarly disputation about what is not theory, there is no consensus about what theory is (Sutton and Staw 1995). For instance, Weick (1995: 385) contends that theory is not something added to a study; it is not created by using diagrams, tables, and references, most importantly is not "feigned by a flashy conceptual performance" (also see Reay 2015). Theory requires the explicit clarification of contested concepts using data and the generation of propositions to explain this evidence. Table 1 highlights key resources used in theory.

Theory provides reasoned and justifiable explanations of the relations between data and actions, and between symptoms and recommended prescriptions. A theory without evidence is no more helpful than evidence without a reasoned and reasonable explanatory theory. Empiricists claim "that 'data speak for themselves' without the benefit of . . . perspectives, orientations, metatheories, frameworks, or other such quasi-theoretical forms" (Markovsky 2008: 426). However, no amount of sophisticated empirical work can substitute for the lack of theory needed to make meaning of the evidence. Without theories, researchers do not have the concepts to collect evidence let alone to interpret it. Of course, the phenomena that theories are used to investigate, analyze, and explain are complex. Moreover, the solutions that theories give rise to are just as complicated, if not contradictory.

Theory produced in English in the Anglosphere either weakly aspires to universal relevance or is strongly presumed to have universal application. Such theory is claimed to have applicability beyond a particular time, and place, supposedly being relevant to every time and place and applicable under all conditions.

There is, however, a problem here for postgraduate research education. Unfortunately, little attention is given to developing postgraduate researchers' capabilities for theorizing (Biesta et al. 2011). The problem is that they are "primarily exposed to finished theories and are not aware of the process that goes into the production and design of a theory" (Swedberg 2016: 5). Postgraduate "training" sees received theories being distilled, packaged, and transmitted across generations of researchers (Markovsky 2008). Postgraduates come to associate "theory" with the finished products they are expected to use. However, explanations and justifications about how theory is generated are usually missing from publications presenting theory as product.

Postgraduates are trained to use existing theory to collect and analyze data. Rather than also learn how theories might be developed, they only get "to know theory once it has been discovered and turned into its publishable version" (Swedberg 2016: 8). They learn little about how and why major theorists actually produced their theories. As Sutton and Staw (1995: 380) observe, "reading major theorists and writing literature review papers is often passed off as training in theory building, even though such assignments really don't teach one how to craft conceptual arguments." Moreover, little attention is given to understanding the role of languages and their translation in developing theory (Montgomery 2000). The next section considers the trial-and-error process of theorizing, the work that comes prior to presenting a finalized theory.

Table 1 What theory might and might not be

Resources for theory	What theory might be	What theory might not be
References	Refer to previous theoretical work to set the stage for new conceptual arguments; acknowledging the stream of research which is being used and to which an original contribution to knowledge is being made; provide a detailed account of what concepts, evidence, and arguments are being extracted from other researchers' work	Mentioning the names of theories; listing references to existing theories; using unconnected references; giving ceremonial or cryptic citations; giving references that merely point to theories
Data	Evidence is important in confirming, revising, or discrediting existing theory; evidence is necessary for guiding the development of new theory; after patterns or outliers in evidence have been established, theory is used to explain the reasons why	Data by themselves are not theory
Variables	A list or catalogue of well-defined constructs or variables are important; a theory explains how and why these constructs come about and are connected	Lists of variables are far from a well-developed theory
Diagrams or figures	Helpful figures show relationship sequences, and pathways, in logical order, indicate a chain of causation or how a variable intervenes in or moderates a relationship; temporal diagrams show how a particular process unfolds over time	Simply portraying relationships among constructs
Propositions, hypotheses, or predictions	A well-crafted, nuanced proposition makes an explicitly conceptual argument about how and why variables relate according to some logical operation; theorizing starts with a few conceptual statements (propositions) that build a logically detailed case with elegance and interconnectedness to explain why connections were observed; verbal explication of the underlying logic that spell out reasons why a phenomenon occurs or why it unfolds in a particular manner	A concise statements about what is expected to occur (a hypothesis) is not a theory

Theorizing

The relationship between theory and theorizing is usefully thought of as operating along a continuum rather than as a dichotomy. It is difficult to establish where theorizing ends and a theory begins (Clegg 2012). Theorizing is the intellectual

work that precedes the realization of a theory (Swedberg 2012, 2016). Theory and theorizing are inextricably bound together (Weick 1995). Theorizing proceeds and is practiced with the guidance of existing theory. Theorizing builds on existing theories in a given field.

Theorizing is the creative intellectual work of making an original contribution to knowledge. The work of theorizing consists of "activities like abstracting, generalizing, relating, selecting, explaining, synthesizing, and idealizing" (Weick 1995: 389). Theorizing itself may start with speculations and progress through a nonlinear process of trial-and-error to concepts, typologies, models, and explanations (Sutton and Staw 1995). Through the exercise of a "disciplined imagination" (Weick 1989), theorizing makes sense of evidence using concepts and reasoning which offer a credible way to recommend interventions that are likely to make a desirable difference. Theorizing is the practical process by which "a theory is put together; how it is handled in empirical research – and how it can be taught in an effective manner" (Swedberg 2016: 6).

Research investigating ways to theorize emerged in the 1950s, waxing and waning over the decades (Zhao 1996). Renewed interest in developing postgraduate researchers' capabilities for theorizing now focuses on them learning to generate and use novel conceptual tools (Swedberg 2012). The development of postgraduates' capabilities for theorizing means learning how to formulate theoretical tools during the course of their research (Biesta et al. 2011). As concepts are developed, ordered, and entwined, theorizing moves to setting forth propositions through an evidence-driven, reasoned argument (Weick 1995). Emergent theoretical products are spun out through the research process: citations are elaborated upon; references are engaged to make meaning of data; evidence is categorized using typologies; and figures, diagrams, and tables are used to stretch propositions. These actions indicate progress and give direction to theory development. Through using counterevidence and exploring counterarguments nuanced, original claims on knowledge may be advanced. If graduate researchers continue with the challenges of theorizing for a decade or two, they are likely to acquire a very solid understanding of the challenges of producing a theory (Swedberg 2016).

Because theorizing involves intellectual struggles, it is a humbling experience. All theorizing is a struggle to make meaning. The scholarly work of building theory is fraught with conflicts and contradictions which make it time-consuming (Swedberg 2016). A key struggle involves unraveling of the concepts which are pertinent to forming a proposition that explains and justifies the mechanisms that can reasonably be claimed to be at work in the evidence (Sutton and Staw 1995). Another area of struggle concerns the role of languages in theorizing. A key struggle is to generate theoretical tools from multiple languages in the face of the boundaries imposed by English-only monolingualism (Choy et al. 2015). Multilingual postgraduate researchers' interpretations and translation of a metaphor from an African language into English are mediated by struggles over Anglo-African understandings of theory (Horton 1971). In today's postcolonial, neocolonial, post-cold war world, the conditions for theorizing are no longer restricted to English-speaking intellectual elites (Lemert 1993).

Divergence in Theorizing

Language is important for theorizing. Post-monolingual research methodology signifies the pedagogical possibilities for extending postgraduate researchers' capabilities for making original contributions to knowledge through them using their full linguistic repertoire for theorizing (Singh 2009, 2010). The focus here is on multilingual postgraduates' exploring how the divergences in their full linguistic repertoire can be brought to bear in their research as resources for theorizing (Jullien 2014). Post-monolingual research methodology sees multilingual postgraduates working through collaborative studies to claim the power to produce novel theoretic-linguistic tools. Monolingual English-speaking academics benefit from such collaborative studies, gaining knowledge of unfamiliar theoretical tools from those who speak other languages – whether it be Arabic, Farsi, Yoruba or another language. Mutual learning occurs through co-constructing theory based on intellectual/racial equality (Tran and Nguyen 2015).

The term of theoretic-linguistic tools refers to the concepts, metaphors, and images expressed in a given language that can be turned to analytical purposes. For example, the concept of "Vietnamese theoretic-linguistic tools" designates metaphors expressed in the Vietnamese language that can be used as analytical concepts in research reported in English. It does not refer to some particular essence of Vietnamese-ness. Rather the divergences between the ideas expressed in Vietnamese and English are used to open up novel possibilities for theorizing. Thus, the notion of Vietnamese theoretic-linguistic tools means bringing into play the divergence between concepts expressed in Vietnamese and English for the purpose of innovative theorizing. This is similar to the notion of "Chinese thought," which Jullien (2014: 147) uses to designate "the thought which has been expressed in Chinese . . . in the same way 'Greek thought' is that which is expressed in Greek." Thus, the generation of theoretic-linguistic tools is not a matter of teaching postgraduates' existing southern theory (Arjomand 2008) or Confucian theory (Spickard 1998).

Multilingual postgraduates' research education focuses on developing their capabilities for theorizing through exploring the divergences that arise from doing so in two or more languages (Singh and Huang 2013). To enhance their capabilities for theorizing, they establish a relationship between the concepts, metaphors, or images they know or can access in one language and new knowledge they are producing in another language (Singh and Shrestha 2008). Through post-monolingual research methodology, multilingual postgraduate researchers produce divergence in theorizing that can make changes in their field of inquiry (Tran and Nguyen 2015). Postgraduates are not required "to marginalise earlier acquired theoretical and methodological knowledge when they arrive at a new university" (Tange and Kastberg 2013: 4).

Recent research conceptualizes multilingual postgraduate researchers as epistemic agents capable of theorizing and generating critiques (Singh 2012), rather than empirical objects framed as difficulties, uncertainties, and deficiencies (Ryan 2011). Multilingual postgraduates are recognized as epistemic agents who produce original theoretical knowledge in their field of study (Ng 2012. Informed by an understanding of metaphors as concepts (Lakoff and Johnson 1980), researchers have

investigated the possibilities for developing Anglo-Chinese modes of theorizing and critique (Singh and Han 2009; Singh and Huang 2013; Singh and Meng 2013). This research contrasts with English-only research education which marginalizes postgraduates' use of other languages to produce novel theoretical tools, thereby constraining efforts to realize needed innovations (Choy et al. 2015; Ryan 2011).

Postgraduates attracted to post-monolingual research methodology are intellectual agents who resist the academic dependency that sees their minds being held captive to English-only pedagogies and theories (Alatas 2001, 2006; Andrews and Okpanachi 2012; Beigel 2011; In 2006; Sabir and Sabir 2010; Vukovich 2010). Such postgraduate researchers engage with postcolonial theory (Carvalho and Flórez-Flórez 2014; Manathunga 2010, 2011); debate the geopolitics of knowledge production, circulation, and consumption (Agnew 2015; Agrawal 1995; Akena 2012; Grosfoguel 2013; Mignolo 2003); and investigate theorizing by post-monolingual scholars from around the world (Keim et al. 2016; Marker 2004; Mayuzumi 2006; Yildiz 2011). The deepening of postgraduate researchers' capabilities for theorizing are important steps toward reconfiguring Anglophone universities as multilingual learning spaces (Friedenberg 2002; Holmen 2015; Singh 2011; Van der Walt 2013).

In sum, how theory is generated and the languages used for theorizing are important but are long neglected aspects of postgraduate research education (Sutton and Staw 1995; Swedberg 2016). Post-monolingual research methodology opens up to exploration the question of building multilingual postgraduate researchers' capabilities for divergence in theorizing, thereby extending their aptitude for making an original contribution to knowledge (Singh 2013). Their multilingual repertoire of concepts, metaphors, and images constitutes a potential reservoir of analytical tools. Making their multilingual repertoire constitutive of the work of theorizing makes it possible for them to shape their research practices and contributions to knowledge using post-monolingual analyses. Thus, post-monolingual research methodology provides a way of doing postgraduate research education that activates trans-lingual dialogues and develops more representative approaches to theorizing (Keim et al. 2016). The next section explores the rationale for developing multilingual postgraduates' researchers' capabilities for generating divergence in theorizing.

Divergence in Theorizing and Multilingual Postgraduates' Research Education

Anglophone universities recruit domestic and international postgraduate researchers who speak languages from throughout the world. Not surprisingly, there is a rising appreciation of multilingualism as the norm in otherwise Anglophone universities (Horner et al. 2011; Flores and Schissel 2014). Post-monolingual research methodology is oriented to adding value to the knowledge generated through multiple languages. The facilitation of such a methodology opens up divergences in theorizing. The question is whether there are reasonable educational grounds for doing so. Here consideration is given to the reasons that might make this methodology worth considering.

Trans-languaging

For multilingual postgraduates, academic literacy developed in their first language can, with appropriate pedagogical interventions, enhance their conceptual development in English (Feinauer et al. 2013; Madiba 2014). Research indicates that proficiency in one language facilitates concept development in the new language through skill transfer between languages (Duarte 2015). For instance, Adamson and Coulson (2015) found that for Japanese-speaking students of English, trans-languaging improved their learning in academic English. Moreover, the transfer of specific academic concepts from one language to another leads to the development of both languages (Goodrich et al. 2013; Giambo and Szecsi 2015). Trans-languaging is an advantage, contributing important cognitive benefits to students (Prah and Brock-Utne 2009). Multilingual students who use their first language with English demonstrate better academic performance than do those students who are given English-only instruction (Paradowski 2011). Prioritizing students' multilingualism in their education develops their academic literacy in their first language, transfers literacy skills to English, and improves their English literacy skills (Li and Zhu 2013).

Due to a growing number of multilingual postgraduate researchers in Anglophone universities, understanding the importance of trans-languaging is necessary for academics and university managers (Canagarajah 2011; García and Wei 2014). Those who understand the educational benefits of trans-languaging and the negative effects of language loss implement strategies and policies to extend students' multilingual skills (Hornberger and Link 2012). Moreover, monolingual English-speaking academics who appreciate the value of trans-languaging for multilingual students' learning use pedagogies that strengthen these skills (Schwarzer and Fuchs 2014). Understanding the educational benefits and skills required for trans-languaging pedagogy academics uses students' languages scaffolding their learning (de Oliveira et al. 2016; Gort 2015). Those who recognize the educational value of trans-languaging deepen their students' skills for doing so by:

1. Promoting academic reading and writing in their languages
2. Sharing their reading/writing with peers in multiple languages
3. Explaining cognates in academic vocabulary relating to their field of study
4. Creating multi-language research papers using translations

Creativity

Any postgraduate researcher may contribute to the creative work of theorizing by using concepts, metaphors, or images from any of their languages. Theorizing is a "creative accomplishment that benefit[s] from … unrestricted diversity [and] open mindedness … with ideas for new theories, or for improving existing theories, coming literally from anywhere and anyone" (Markovsky 2008: 425). Creativity in research benefits by employing the intellectual resources available in the world's

multiplicity of languages (Maingueneau 2015). Language mixing engenders creativity (Bhatia and Ritchie 2016). Creativity comes through multilingual play which involves bending, breaking, and blending ideas from two or more languages (Zhang 2015). Original contributions to knowledge can be generated by postgraduates exploring divergences in theorizing using their languages.

Conducting research in one language or another cannot be avoided. However, the press for dominance of English in research tends toward "the impoverishment of scientific creation, than to originality" (Maingueneau 2015: 116). The press is to marry intellectual prestige in research with English-only monolingualism, despite this not necessarily guaranteeing intellectual innovation (Scarino 2014). Multilingual production and circulation of knowledge open fields of research to intellectual currents other than those which have international dominance. Given the role of languages in intellectual creativity, this might be preferable to producing research only globalized English (Kharkhurin and Wei 2015; Lvovich and Kellman 2015). In working to produce original knowledge, postgraduate researchers may bring forward their multilingual intellectual repertoire, demonstrating that languages are integral to all research.

Multilingual postgraduate researchers have a positive impact on the generation of creative ideas in Anglophone nations (Black and Stephan 2007; Larivière 2011; Stephan and Levin 2001). For instance, such postgraduates have a significant input into developing new patent applications for the USA (Chellaraj et al. 2005). This gives the USA a significant advantage in marketing its postgraduate education around the world. However, Asian countries are struggling to improve their offerings in postgraduate education and encouraging graduates to stay on after completing their studies (Marginson 2008). In turn, this is impacting on the competitiveness of the USA. In response, US universities are moving research abroad by collaborating with universities in Asian countries and by locating research campuses there.

Education

If postgraduate candidates have multilingual skills, how might their research education capitalize on, extend, and deepen their knowledge in these languages? Post-monolingual pedagogies are being used to move beyond English-only medium instruction in postgraduate education (Friedenberg 2002; Van der Walt 2013). The Danish strategy of "More Languages for More Students" (Holmen 2015) uses student's multilingualism as an intellectual resource in their academic studies, mobility education, and preparation for future employment. Multilingual postgraduate education gains support from the multiple languages being used to theorize (Kemper 2007; Winchester 2013; Woolworth and Thirumurthy 2012). For instance, the Japanese concept of *ba* is employed by Fayard (2003) to theorize knowledge creation. Similarly, Grant (2010) provides an approach to doctoral education which engages *mātauranga Māori* (Māori knowledge). Further, Singh et al. (2016) use the Samoan concept of vā to explore the transcultural mobilization of postgraduates' production of theoretic-linguistic tools.

Researchers are addressing the challenge of removing the exoticism of using concepts from other languages than English. Trowler et al. (2005) use the Chinese concept of *chi (qi)* to study blockages to change in British universities. Three blockages include the incoherent and incomplete levels of analysis; the poorly thought-out, contested theories of change; and the incompatible and incoherent bundling of policies. Trowler et al. (2005: 439) conclude that university policies "block the chi of change" because they are "not joined up" but "developed in isolation from each other they proceed in parallel lines, only linking where they obstruct." The separation among initiatives meant to change universities achieves little in the way of harmony and the flexible intermingling of reform efforts.

Pioneering curriculum ventures encourage multilingual postgraduates to question English-only concepts governing their education as they investigate alternatives available in other languages. Haigh (2009) charts students' reactions to the use of Indian philosophical concepts in a British university course. Specifically, these included the Hindi concepts of "sattva, which creates purity and serenity and controls by contentment; rajas, which inspires passion, movement, creativity, and destructiveness and controls by desire; and tamas, which stifles with negativity, ignorance, and dullness and controls by indolence" (Haigh 2009: 274). Using these concepts stimulated students' learning transformations as they explored the reconceptualization of their relationships with the places they inhabit.

Academic Freedom

Academic freedom is a variable and contested practice. Constituted through the obligation to speak or write as a public intellectual, academic freedom is based on the notion that democracy is constituted diversity (Chatterjee and Maira 2014; Marginson 2014). Everywhere around the world, practices of academic freedom governing the work of knowledge production and dissemination are limited and controlled by the political economy of universities (Garnett and Butler 2009). Because it challenges the prevailing socioeconomic order in the USA, the academic freedom to investigate racial, gender, ethnic, and economic equality has been targeted, stigmatized, and penalized (Anderson 2014; Price 2004). Academics whose research demonstrates intellectual/racial equality confront constraints on their academic freedom. They are constrained by Anglophone universities where they are "required to raise money and often to tailor their research and teaching to the needs of clients" (Marginson 2014: 38). However, when academic freedom is discussed, postgraduates' multilingual skills tend to be overlooked, as if the language for exercising academic freedom is irrelevant (Bowden 2010; Macfarlane 2012; Lee 2005; Schaller 2007).

Arguably, multilingual postgraduates' academic freedom is affected by the relations between Anglophone universities and (1) their multilingual students, (2) the multilingual societies they serve, and (3) state policies governing languages education (Holmen 2015; Van der Walt 2013). The separation between the multilingualism within society and the controlled English-only monolingual intellectual space of universities constrains the academic freedom of multilingual postgraduate

researchers. The prevailing norms of Anglophone universities, requiring academic work to be conducted only in English, separates postgraduate education and academic freedom from multilingual societal relations and state policies. However, because academic freedom is a relevant principle and practice for postgraduate researchers, then its multilingual component warrants recognition.

Employability

The multilingual skills of postgraduate researchers are important for ensuring they can compete in the larger world of mathematics, engineering, technology, arts, languages, and science (METALS). Languages name people's living relationships with diverse ecosystems. People use the arts to give these diverse ecosystems meaning in their daily lives. Languages are necessary to name "medical and scientific innovations, new crops and new markets, and especially the management of unique bio-ecology spheres," (Lo Bianco 2010: 41). The feasibility for addressing these issues is enhanced through the meaning making systems provided by the arts. Logically, the mathematics of weather, the engineering of sustainable land and water management, the technology of plant cultivation, and the science of animal husbandry are necessarily constituted through languages and the arts in a "mutually reinforcing matrix" (Lo Bianco 2010: 41).

There is mounting research indicating the need for postgraduates to demonstrate multilingual employability capabilities (Golovushkina and Milligan 2012, 2013; Jones and Warnock 2015; Parada and Peacock 2015). For instance, multilingual white-collar workers actively use resources from their multiple languages to develop the multimodal functions of digital technologies (You 2011). Likewise, multilingual health professionals explore the contested uses of concepts expressed in different languages, while dealing with situations where no appropriate equivalent can be found across languages (Jagosh and Boudreau 2009). However, the $100 billion-a-year US intelligence business is limited by its use of narrowly circumscribed concepts drawn from the Anglosphere (Aldrich and Kasuku 2012). Similarly, because interior design education is dominated by Eurocentric theories, it devalues non-Western creativity leading to a loss of economic opportunities for graduate designers (Sohoni 2009). In contrast, trans-languaging strategies support the learning necessary for building employability attributes required of multilingual professionals (Marriott 2013; Van der Walt 2013).

In terms of employability, an important function of education is to offer postgraduates options that allow them to imagine and position themselves as legitimately professional members of multilingual communities. Pavlenko (2003) found that professional legitimacy differs depending on what community their postgraduate education frames their projected membership. Anglophone universities may position multilingual postgraduates for an (a) English-only monolingual community, (b) an English language learning community, or (c) a multilingual community. Readings and discussions which offer postgraduates imagines of professional employment in multilingual communities generate learning transformations that legitimate their multilingual skills.

How postgraduates' multilingual skills are deployed in their research education enables and/or restricts their recognition as members of particular professional communities. Graduates can use two or more languages to participate in multiple, varied, and overlapping professional communities (Granados 2015). Achugar (2009) indicates the importance of postgraduate education in the USA in defining, recognizing the use value, and adding value to professionals' multilingual skills. Multilingual postgraduates benefit from institutionalized validation of their translanguaging expertise as integral to their professional work through education.

Importantly, academics, both monolingual and multilingual alike, can use research education to enhance postgraduates' work in multilingual communities. Such research raises the professional awareness of postgraduates' own practices and enables improvements in them (Nevárez-La Torre 1999). The resulting learning transformations changed these postgraduates' conceptions of multilingualism, their practices, and their interpretations of policies. Such research recognizes that professionals use multiple languages to realize their work, indicating that their languages have a legitimate place in postgraduate education.

History

When Muslims and Christians exchange artistic, scientific, and political knowledge, the learning transformations change their ways of viewing the world. For instance, Belting (2011) argues that the pictorial theory of perspective which allowed Florentine artists to depict the scenes from a spectator's point of view is an elaboration of the visual geometry theory of light devised by an Islamic mathematician born in eleventh-century Basra. European philosophers opposed Alhazen's theory on optics, which was translated from *Kitab al-Manazir* into Latin in Spain, under the title *Perspectiva.* However, in 1420 in Florence, Brunelleschi began applying Alhazen's perspectival geometry to painting. Belting's (2011) study provides multilingual postgraduate researchers' insights into how innovations are possible and enhanced to the extent to which different intellectual cultures are transformed by their encounters with each other's' knowledge.

Knowledge is a highly mobile constituent of the world's diverse intellectual cultures. Important ideas flowing from language to language create a continuous flux in knowledge production. The production and transmission of scientific knowledge is a complex multilingual process whose intermingling provides a focus for scholarly disputation (Beckwith 2012). However, the parochialism and universalistic claims of theories in English is evident in the lack of acknowledgment of the ways in which knowledge from the world's multiple languages has mutated to inform many of these ideas (Bilgin 2008). Over the centuries the movement of peoples, goods, and objects from around the world has altered the ways knowledge is understood, produced, and disseminated. Cook (2007) studied how commercial values drove the generation, accumulation, and exchange of knowledge. Through such processes the ways of discovering new knowledge, determining truth, and assigning worth to research-based knowledge continue to be reshaped.

Today's research often draws on theories formulated over the centuries through multiple languages. For instance, advances in astronomical, mathematical, and medical sciences came through the historical inter-referencing and translation of knowledge across diverse languages including Arabic, Greek, Hebrew, Latin, Pahlavi (Persian), Sanskrit, and Syriac (a form of Aramaic) (Montgomery 2000). The European Renaissance relied on Sanskrit compilers of Babylonian astronomy, Syriac-speaking scholars of Greek in Persia, and Arabic- and Pahlavi-speaking scholars of Syriac. Thus, English-only postgraduate education is likely to be suffused with concepts and theories from many of the world's languages (Sen 2006). The historical intellectual relations and interconnections between English and other languages have fed the emergence of mutually constituted ideas (Shen 2014).

The long-term exchange of knowledge from language to language has alternated with the dominance of one, followed by the dominance of the other (Gordin 2015). On the basis of this historical understanding, Goody (2010) argues that the current period of intellectual supremacy and associated Anglophone sense of superiority may come to an end with a new alternation in favor of knowledge produced in other languages. English is not the exclusive source of intellectual innovations. Ceaseless travel has produced the to-and-fro movement of knowledge. This has generated new knowledge and fostered new ways of looking for knowledge and given knowledge with new meanings. Post-monolingual research methodology aims to extend awareness of the history of knowledge exchange, translation, and inter-referencing by drawing out the intellectual contributions made in other languages (Singh 2011).

Democracy

Democracy holds that those who have the right to govern are "the people." The demos consists of those who have "no other title than the very absence of superiority" no other claim than to be part of "the people" govern a democracy (Rancière 2009: 41). Democracy stands against claims that those who should govern are those who can claim superiority on the grounds of intellect, race, wealth, or breeding. For democratic postgraduate education, there are no noble or ignoble students, no noble or ignoble languages, and no noble or ignoble places from which original theories cannot be produced (Hilliard 2006). Theorizing is democratic in the sense that postgraduates should "not let anyone theorize for you" (Swedberg 2016: 21). For multilingual postgraduate researchers, theorizing is democratic insofar as they use intellectual resources from their full linguistic repertoire.

Democratic postgraduate education continues the struggle for intellectual/racial equality by those consigned to being unequal (Choy et al. 2015; Price 2004). Accordingly, multilingual postgraduate researchers are presumed to capable of being equally reasonable and reasoning beings in any of the languages they use (Singh and Chen 2012). For Rancière (1991: 138), democratic education takes intellectual/racial equality as "a point of departure, a supposition to maintain in every circumstance . . . not [as] an end to attain." This is not a matter trying to prove that everyone is equal. Pedagogically, the task is to find out where efforts to verify

the presupposition of intellectual/racial equality might lead, with postgraduates realizing unexpected and unanticipated outcomes in their capabilities for theorizing (Croizet 2013; Price 2014; Singh 2012; Singh and Meng 2013).

Theorizing is a collective endeavor requiring input and interactions of many people. The endeavor to produce theoretical tools employs shared conventions and is improved "through critical feedback from readers other than their authors" (Markovsky 2008: 424). Thus, it is a mistake to view the world's knowledge production as divided between "head nations," such as the USA and the UK producing theory, and "body nations," such as China, India, and Vietnam generating data for analysis by the former (Brown et al. 2010: 3). Over time such ventures result in collaborating researchers becoming more skilled. The work required to institutionalize post-monolingual research methodology and build postgraduate researchers' capabilities for divergence in theorizing requires collective effort.

In sum, this section canvassed a range of research indicating plausible educational grounds for building multilingual postgraduate researchers' capabilities for investigating divergence in theorizing. This extends postgraduate research education beyond using extant theory, mostly in English. Having considered the rationale for post-monolingual research methodology, the next section explains strategies for building postgraduates' capabilities for theorizing in Anglophone universities.

Multilingual Postgraduates' Capabilities for Divergence in Theorizing

Post-monolingual research methodology and divergence in theorizing involve processes of interrogation, refinement, and elaboration. Divergence among concepts in languages opens up other paths for theorizing, diverging from expectations governing the use of extant theories in English (Jullien 2014). Here the process of developing postgraduates' theorizing capabilities is configured pedagogically (Swedberg 2016). Through recurring practice, more nuanced explorations enhance the prospects for innovative knowledge production. A first step involves attending to the criteria for gaining acceptance of divergence in theorizing within a particular scholarly community.

Criteria for Community Acceptance

The products of multilingual postgraduates' theorizing have to gain acceptance among a community of researchers. Collective evaluation processes include thesis examination, peer review of research publications, and the assessment of grant applications. Through these processes, the standards used to evaluate their theorizing become explicit, extending awareness of what is required to deepen their capabilities. Their theorizing "has to be translated into a different language [that shows they]

know how to construct a theory according to the rules that are accepted in the profession" (Swedberg 2016: 8). Postgraduate researchers can critically reflect on their theorizing capabilities using three criteria.

First, theorizing explores the underlying mechanisms of reality, knowledge, and existence. A key requirement for theorizing is that it breaches the restraints of the "taken-for-granted common-sense assumptions that generally frame our vision of the world" (Sears 2005: 28). Postgraduate researchers use theorizing to reconsider what is taken to be self-evident by questioning familiar, accepted ideas, policies, and practices. Theorizing generates penetrating, explanatory insights (Horton 1971).

Second, postgraduate researchers theorize on the basis of previous research, working to transcend the limitations of existing theories. The demonstration of any cause/effect relationship requires reasoned analysis to explore multiple causes and effects and to question which is which (Swedberg 2012). Theorizing is involved, in every phase of a research project. Constructing a research problem through deciding what are the "right" question(s) to investigate, to deconstructing and reconstructing the problem as the data are analyzed, involves theorizing (Biesta et al. 2011; Clegg 2012).

Third, fitting concepts together in a tidy package to achieve consistency and coherence is a key standard for judging research. Theorizing is based on systematic empirical investigation, moving beyond loose speculations (Sears 2005). Situated within real-world milieu, theorizing requires rigorous testing. Explanations, inferences, propositions, and concepts deduced through theorizing have to be demonstrated rather than asserted. Theorizing is elaborated through detailed data analysis and logical reasoning. Given these evaluative criteria, a variety of strategies can be used by multilingual postgraduates to develop their capabilities for divergence in theorizing. The following strategies should not be read as a prescriptive procedure but as a guide to be explored.

Creative Impetus

A creative impetus is warranted for employing post-monolingual research methodology. Having postgraduate researchers draw up a proposal based on testing existing theory available in English leads "to more of the same rather than to new insights" (Swedberg 2016: 9). A creative impetus is necessary to build postgraduate researchers' capabilities for divergence in theorizing and for generating an original contribution to knowledge. This may be done by conducting preliminary observations that focus on finding sources of new concepts, metaphors, and images. To open up one's imagination for theorizing, there is broad range of ideas to be tapped into, such as available in movies, poetry, graffiti, and newspaper articles. Lemert (1993) notes that creative moments in theorizing have come from those who are poor, dislocated, suffering rather than just from privileged intellectuals. For instance, a creative impetus for an investigation into global service learning might begin with viewing the film, *Noble* (Bradley 2014), which represents the life history of Christina Noble, a children's rights campaigner in in post-Cold War Vietnam.

Contextualizing

A list of concepts, metaphors, and images which names the phenomenon under investigation provides a useful outcome of pursuing a creative impetus. The meaning of these concepts benefits from being understood in the context of history, culture, and institutions. In sourcing these concepts from languages other than English, it is important to explain the context from where they were chosen, the reasons for their selection, and the grounds any conscious exclusion of things that have not been named. Contextualization helps in understanding how their meanings are shaped, maintained, and contested through their production, propagation, and consumption among certain social groups operating within complex societal structures (Jepson 2010). The interpretation of the concepts is explained in terms of such contextual characteristics. Within a given sociohistorical context, the mechanisms of struggles see these concepts in a constant flux of meaning and reinterpretation that warrants explanation.

Connecting

A trans-lingual typology can be created to categorize patterns or themes in the evidence relating to the phenomenon under investigation. The specification, clarification, and definition of trans-lingual categories establish the interrelationships among analytical concepts and evidence. A trans-lingual typology can be used to explore the relationship between evidence and concepts, practice, and theory. For Swedberg (2016: 11) "a skilful use of a typology can make it easier to see what elements a phenomenon is made up of and also how these vary." Making connections between the actions represented in the evidence and concepts is important for the practicality of theorizing. Practical theorizing plays an important mediating role in the uptake of meaningful insights.

Conceptualizing

Theorizing is a process for generating conceptual tools to provide analyses of phenomenon being investigated. Because any given phenomenon has already been conceptualized by those involved in its practice this requires openness to questioning the conceptual tools used by participants and researchers themselves. Moreover, the ways in which postgraduate researchers conceptualize the phenomenon are not above and beyond question. Key questions concern what concepts needs to be the focus of research, what is not part of the research, what data warrants collecting, and what conceptual tools might be used to analyze this data (Jepson 2010). A figure or diagram can help use the concepts to make meaning of the phenomenon under investigation. While "diagrams are not theory" (Weick 1995: 388), figures may be used to specify, explain, and justify concepts and their interrelationships.

Contesting

A concept both describes a phenomenon and ascribes value to it. Much research arises out of adherence to one particular use or value of a concept. However, any particular concept is likely to be contested. Scholarly disputation may focus on whether the meaning and/or use of these theoretical tools should be continued or changed. Conceptual contestation is "not resolvable by argument of any kind, [and] are nevertheless sustained by perfectly respectable arguments and evidence" (Gallie 1955: 169). Recognizing concepts as being contested means acknowledging the rival uses to which they are put. Appreciating the value of opposing uses of contested concepts is integral to raising of the level and quality of research-based argument.

Challenging

The mechanisms postgraduates study when investigating a particular phenomenon may be explained through evidence-based propositions detailing the interrelationship between key concepts. Challenging explanations require propositions grounded in evidence and informed by explorations of alternative interpretations and counterevidence. A challenge entails checking the plausibility of researchers' evidence, reasoning, and arguments favoring a given proposition and then doing likewise with the counterevidence and counterarguments. Imagination can inform researchers' capabilities for logical, reasoned, and reasonable scholarly argumentation. Swedberg (2016: 17) contends that postgraduates "need to know what imagination is; you need to cultivate it; and if you have to turn it into a kind of habit." Imagination allows postgraduates to get a sense of that which does and does not exist.

In sum, these strategies provide a vehicle for exploring post-monolingual research methodology. However, building multilingual postgraduates' capabilities for theorizing faces substantial challenges from English-only postgraduate education. The next section suggests the value of employing scholarly skepticism to mitigate or otherwise mediate the tensions posed by English-only monolingual education.

Interrupting English-Only Postgraduate Research Education

Post-monolingual research methodology uses the conceptual divergences made possible by two or more languages for theorizing to make original contributions to knowledge (Singh 2013). The exploration of theoretic-linguistic divergences brings into play the flux in conceptualization between English and other languages (Jullien 2014). However, this work of theorizing is undertaken in the face of tensions posed by English-only monolingualism and the insistence on using extant theories available in English (Ives 2009). For instance, when he drew on Hindi concepts, Amartya Sen (2009) knew his book, *The Idea of Justice*, would be vulnerable to resistance from at least some Anglophone scholars. Sen (2009: xiii–xiv), a Nobel Laureate,

slipped in a caveat that laid bare his awareness of the reluctance among Anglophone theorists to engage concepts in non-Western languages: "one of the unusual – some will probably say eccentric – features of this book compared with others writing on the theory of justice is the extensive use that I have made of ideas from non-Western societies." Pursuing divergence in theorizing in Anglophone universities which privilege English-only education is a challenge that gives grounds for caution (Flores and Schissel 2014; Scarino 2014).

There are problems with English-only postgraduate research education. The concern is that more than a few Anglophone academics and students are only interested in the curatorial, exotic, or magisterial features of Asia, rather than Asian intellectual cultures theoretic-linguistic assets and modes of critical thinking (Mayuzumi et al. 2007; Sen 2006). This interest reinforces the prevailing binary which privileges the English language as the source of theory and positions non-Western languages as a source of data (Alatas 2006). The "lack of interest" in multilingual postgraduate researchers' capability for theorizing sees their theoretic-linguistic assets being deemed "second class" (Zhou et al. 2005: 299). However, English-only theory drives multilingual postgraduates' concerns about the "linguistic and cultural disparity in knowledge production, dissemination and validation" (Zhou et al. 2005: 304). Some postgraduates expect intellectual reciprocity, especially given the global significance of Asia's revival that began with its colonial liberation last century.

However, it is not surprising that postgraduate research education in Anglophone universities tends to use of English-only pedagogies and theories (Moore 2016). By default, English is the language of international education (Gordin 2015). Against the need for innovation that only comes through intellectual diversity, the internationalization of Anglophone universities has generated the press for English-only uniformity in postgraduates' education (Choi 2010; Rayner et al. 2016; Wihlborg and Teelken 2014). Common sense dictates that education is conducted in English everywhere. Students, academics, university managers, and education policy-makers around the world know that a high standard of English is now required for postgraduate education. Along with immersion in the everyday life of Anglophone universities, multilingual postgraduates are sold fee-paying English courses. Anglophone universities require multilingual students to demonstrate knowledge of theories in English (Alatas 2001, 2006); the academic uses of their other languages is abandoned (Friedenberg 2002).

Reforms to standardize or harmonize education across Anglophone universities are informed by English-only monolingual ideologies. Such reforms do not address the multilingual educational potential of many students. They marginalize postgraduates' multilingual skills and their capabilities for theorizing from across their linguistic repertoire (Flores and Schissel 2014). Learning through the medium of English-only instruction is taken-for-granted in Anglophone universities' postgraduate education. The long-held policy of unidirectional English monolingualism of Anglophone universities articulates with the assumptions underlying English-only workplaces and associated legislation (Ainsworth 2010; Horner and Trimbur 2002).

Multilingual postgraduate researchers are labeled as "non-English-speaking background" (NESB) (Mestan and Harvey 2014; Oliver et al. 2012). "NESB" postgraduates are characterized as being problems (Hopewell and Escamilla 2014; Oliver et al. 2012). However, the amorphous category of "NESB" is contentious. Determining learning outcomes for multilingual postgraduates from particular subgroups which are underrepresented in Anglophone universities is difficult. Those underrepresented subgroups of so-called NESB postgraduates who underachieve face relatively poor employment outcomes (Mestan and Harvey 2014; Ozdemir 2014). In Anglophone universities monolingual English-speaking postgraduates are advantaged over NESB students because they have a preexisting efficacy in academic English (Gordin 2015).

English-only practices have significant substantial drawbacks for multilingual postgraduate researchers and their production of original knowledge. Misconceptions about the educational value of postgraduate researchers' multilingual skills are evident in Anglophone universities that hold that these skills interfere with their learning through English (Horner et al. 2011). Postgraduates' use of their full linguistic repertoire in their research is discouraged. The imposition of English-only monolingualism is evident in the submission of theses and journal articles by multilingual postgraduates and the infrequent uses of references and concepts from languages (Singh and Meng 2013). This deficit approach jeopardizes postgraduate researchers' development of their linguistic skills and theorizing capabilities (Harper 2011).

An important question is whether the intercultural, global, and international education of Anglophone universities can be adequately explained by making exclusive use of theories produced only in English (Jepson 2010). Post-monolingual research methodology builds postgraduate researchers' capabilities for opening these fields up to exploration and understanding through divergence in theorizing. Concepts, metaphors, and images from languages marginalized by English are being used to analyze policies and practices in these fields (Fayard 2003; Grant 2010; Haigh 2009; Kemper 2007; Singh et al. 2016; Trowler et al. 2005; Winchester 2013; Woolworth and Thirumurthy 2012).

Many Anglophone universities are multilingual to some extent (Preece 2011; Van der Walt 2013). Moreover, there is a mistaken perception that a good command of English is enough to be successful as a result of postgraduate education (Ozdemir 2014). This hides the complexity of learning and working in multilingual communities (Aldrich and Kasuku 2012; Golovushkina and Milligan 2012, 2013; Granados 2015; Jones and Warnock 2015; Lo Bianco 2010; Parada and Peacock 2015). To network, collaborate, and thrive in the world's multilingual knowledge economy, the world's knowledge workers require multiple language skills (You 2011). Despite not being officially sanctioned, multilingual postgraduates use their full linguistic repertoire to overcome obstacles in learning and developing subject expertise (Moore 2016). The trans-languaging practices of multilingual postgraduates are more beneficial to their learning and employment than Anglophone universities' privileging of English-only pedagogies.

The educational importance of postgraduate researchers' multilingual skills warrants official university recognition. In the USA there are moves to recognize students' proficiency in an additional language to that of English on their diploma (DeLeon 2014). Developing standards that affirm and build on postgraduates' multilingual skills is now a possibility (Flores and Schissel 2014). Anglophone universities can promote the institutionalization of multilingualism, give added value to postgraduates' multilingual skills by certifying them, and provide employers a means to identify multilingual employees (Van der Walt 2013). So too is the creation and implementation of post-monolingual pedagogies (García and Wei 2014). Of course, this research is being undertaken in the face of and undermined through the tensions created by the dominance of English-only monolingualism in postgraduate research education.

Conclusion

This chapter has contributed to advancing knowledge regarding post-monolingual research methodology as a vehicle for building multilingual postgraduate researchers' capabilities for divergence in theorizing. Some characteristics of theory and theorizing in postgraduate research education have been mapped. Of course, it is not an exhaustive account. However, the literature reviewed in this chapter provides a basis for building multilingual postgraduates capabilities for divergence in theorizing.

The rationale for post-monolingual research methodology finds support in research concerning multilingual postgraduates' employability, creativity, and trans-languaging capabilities. Further the history of intercultural knowledge exchange, the centrality of intellectual/racial equality to democracy, and already existing instances of multilingual postgraduate education lend further support to further investigations into this methodology. A theoretic-pedagogical framework, including criteria for community acceptance and strategies, is provided for exploring ways to build multilingual postgraduates' capabilities for theorizing.

This is a field where little knowledge currently exists. The breadth and depth of what is known about multilingual postgraduates' capabilities for theorizing are limited; acting beyond English-only postgraduate education is a challenge. Further inquiries into the intellectual agency of multilingual postgraduates in the production of trans-linguistic theoretical tools may enable post-monolingual research and education to flourish. Postgraduate researchers who investigate to this methodology will play an important role in educating future generations of scholars to do likewise.

References

Achugar, M. 2009. Constructing a bilingual professional identity in a graduate classroom. *Journal of Language, Identity & Education* 8 (2–3): 65–87.

Adamson, J., and D. Coulson. 2015. Translanguaging in English academic writing preparation. *International Journal of Pedagogies and Learning* 10 (1): 24–37.

Agnew, J. 2015. The geopolitics of knowledge about world politics. In *Geographies of knowledge and power*, ed. P. Meusburger, D. Gregory, and L. Suarsana, 235–246. Dordrecht: Springer.
Agrawal, A. 1995. Dismantling the divide between indigenous and scientific knowledge. *Development and Change* 26: 413–439.
Ainsworth, J. 2010. Language, power, and identity in the workplace. *Seattle Journal for Social Justice* 9 (1): 11–12.
Akena, F. 2012. Critical analysis of the production of Western knowledge and its implications for indigenous knowledge and decolonization. *Journal of Black Studies* 43 (6): 599–619.
Akuffo, H., et al. 2014. Doctoral education and institutional research capacity strengthening. *Higher Education Policy* 27 (2): 195–217.
Alatas, S. 2001. Alternative discourses in Southeast Asia. *SARI: Jurnal Alam dan Tamadun Melayu* 19: 49–67.
Alatas, F. 2006. *Alternative discourses in Asian social science*. New Delhi: Sage.
Aldrich, R., and J. Kasuku. 2012. Escaping from American intelligence. *International Affairs* 88 (5): 1009–1028.
Anderson, M. 2014. Ruth Benedict, Boasian anthropology, and the problem of the colour line, history and anthropology. *History and Anthropology* 25 (3): 395–414.
Andrews, N., and E. Okpanachi. 2012. Trends of epistemic oppression and academic dependency in Africa's development. *Journal of Pan African Studies* 5 (8): 85–104.
Arjomand, S. 2008. Southern theory. *European Journal of Sociology* 49 (3): 546–549.
Beckwith, C. 2012. *Warriors of the cloisters*. Princeton: Princeton University Press.
Beigel, F. 2011. Academic dependency. *Global Dialogue* 2 (2): 19–20.
Belting, H. 2011. *Florence and Baghdad*. Cambridge: Belknap Press.
Bhatia, T., and W. Ritchie. 2016. Multilingual language mixing and creativity. *Language* 1 (1): 1–14.
Biesta, G., J. Allan, and R. Edwards. 2011. The theory question in research capacity building in education. *British Journal of Educational Studies* 59 (3): 225–239.
Bilgin, P. 2008. Thinking past Western IR? *Third World Quarterly* 29 (1): 5–23.
Black, G., and P. Stephan. 2007. The importance of foreign PhD students to US science. In *Science and the University*, ed. P. Stephan and R. Ehrenberg, 113–133. Madison: University of Wisconsin Press.
Bondy, J. 2016. Negotiating domination and resistance. *Race Ethnicity and Education* 19 (4): 763–783.
Bowden, R. 2010. Students' rights. *Academy of Educational Leadership Journal* 14 (1): 27–36.
Bradley, S. 2014. *Noble [film]*. London: Destiny Films.
Brown, P., H. Lauder, and D. Ashton. 2010. *The global auction*. Oxford: Oxford University Press.
Canagarajah, S. 2002. Multilingual writers and the academic community. *Journal of English for Academic Purposes* 1 (1): 29–44.
Canagarajah, S. 2011. Codemeshing in academic writing. *The Modern Language Journal* 95: 40–417.
Carvalho, J., and J. Flórez-Flórez. 2014. The meeting of knowledges. *Postcolonial Studies* 17 (2): 122–139.
Chatterjee, P., and S. Maira. 2014. *The imperial university.* Minneapolis: University of Minnesota Press.
Chellaraj, G., K. Maskus, and A. Mattoo. 2005. The contribution of skilled immigration and international graduate students to US innovation. World Bank Policy Research Working Paper (3588). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=744625.
Choi, P. 2010. Weep for Chinese university. *Journal of Education Policy* 25 (2): 233–252.
Choy, S., M. Li, and P. Singh. 2015. The Australian doctorate curriculum. *International Journal for Researcher Development.* 6 (2): 165–182.
Clegg, S. 2012. On the problem of theorising. *Higher Education Research and Development* 31 (3): 407–418.
Colenbrander, S., et al. 2015. Renewable energy doctoral programmes in sub-Saharan Africa. *Energy Research & Social Science* 5: 70–77.
Cook, H. 2007. *Matters of exchange*. New Haven: Yale University Press.
Croizet, J. 2013. On the fatal attractiveness of psychology. In *Educational research*, ed. P. Smeyers and M. Depaepe, 33–51. Dordrecht: Springer.

de Oliveira, L., et al. 2016. The use of Spanish by a monolingual kindergarten teacher to support English language learners. *Language and Education* 30 (1): 22–42.
DeLeon, T. 2014. The new ecology of biliteracy in California. Doctoral dissertation, Loyola Marymount University.
Duarte, J. 2015. Cross-linguistic transfer of academic language in multilingual adolescents. In *Transfer effects in multilingual language development*, ed. H. Peukert, 221–247. Amsterdam: John Benjamins.
Fayard, P. 2003. Strategic communities for knowledge creation: A Western proposal for the Japanese concept of Ba. *Journal of Knowledge Management* 7 (5): 25–31.
Feinauer, E., et al. 2013. Cross-language transfer of early literacy skills. *Reading Psychology* 34 (5): 436–460.
Fielding, M. 2007. Beyond 'voice'. *Discourse* 28 (3): 301–310.
Flores, N., and J. Schissel. 2014. Dynamic bilingualism as the norm. *TESOL Quarterly* 48 (3): 454–479.
Friedenberg, J. 2002. The linguistic inaccessibility of US higher education and the inherent inequity of US IEPs. *Bilingual Research Journal* 26 (2): 309–326.
Fulford, A. 2009. Ventriloquising the voice. *Journal of Philosophy of Education* 43: 223–237.
Gallie, W. 1955. Essentially contested concepts. *Proceedings of the Aristotelian Society* 56: 167–198.
García, O., and L. Wei. 2014. *Translanguaging*. London: Palgrave Macmillan.
Garnett, R., and M. Butler. 2009. Should economics educators care about students' academic freedom? *International Journal of Pluralism and Economics Education* 1 (1–2): 148–160.
Giambo, D., and T. Szecsi. 2015. Promoting and maintaining bilingualism and biliteracy. *The Open Communication Journal* 9 (1): 56–60.
Golovushkina, E., and C. Milligan. 2012. Developing early stage researchers: Employability perceptions of social science doctoral candidates. *International Journal for Researcher Development* 3 (1): 64–78.
Golovushkina, E., and C. Milligan. 2013. Employability development in the context of doctoral studies: systemic tensions and the views of key stakeholders. *International Journal of Training and Development* 17(3): 194–209.
Goodrich, J., et al. 2013. Do early literacy skills in children's first language promote development of skills in their second language? *Journal of Educational Psychology* 105 (2): 414.
Goody, J. 2010. *The Eurasian miracle*. Cambridge: Polity.
Gordin, M. 2015. *Scientific babel*. Chicago: University of Chicago Press.
Gort, M. 2015. Transforming literacy learning and teaching through translanguaging and other typical practices associated with doing being bilingual. *International Multilingual Research Journal* 9 (1): 1–6.
Granados, N. 2015. Dual language graduates' participation in bilingual and biliterate communities of practice across time and space. *Bilingual Research Journal* 38 (1): 45–64.
Grant, B. 2010. Challenging matters. *Acta Academica Supplementum* 1: 103–129.
Grosfoguel, R. 2013. The structure of knowledge in Westernized universities. *Human Architecture* 11 (1): 73–81.
Haigh, M. 2009. Fostering cross-cultural empathy with non-Western curricular structures. *Journal of Studies in International Education* 13 (2): 271–284.
Harper, S. 2011. Counting the costs of a global anglophonic hegemony. *Indiana Journal of Global Legal Studies* 18 (1): 515–538.
Helms-Park, R., and P. Stapleton. 2003. Questioning the importance of individualized voice in undergraduate L2 argumentative writing. *Journal of Second Language Writing* 12 (3): 245–265.
Hilliard, C. 2006. *To exercise our talents*. Cambridge: Harvard University Press.
Holmen, A. 2015. Linguistic diversity among students in higher education. In *Transcultural interaction and linguistic diversity in higher education*, ed. A. Fabricius and B. Preisler, 116–141. Basingstoke: Palgrave Macmillan.
Hopewell, S., and K. Escamilla. 2014. Struggling reader or emerging biliterate student? *Journal of Literacy Research* 46 (1): 68–89.

Hornberger, N., and H. Link. 2012. Translanguaging and transnational literacies in multilingual classrooms. *International Journal of Bilingual Education and Bilingualism* 15 (3): 261–278.
Horner, B., and J. Trimbur. 2002. English only and US college composition. *College Composition and Communication* 53 (4): 594–630.
Horner, B., S. NeCamp, and C. Donahue. 2011. Toward a multilingual composition scholarship. *College Composition and Communication* 63 (2): 269–300.
Horton, R. 1971. African traditional thought and Western science. In *Knowledge and control*, ed. M. Young, 208–266. London: Collier Macmillan.
In, K. 2006. Academic dependency. *Korean Journal* 46 (4): 115–135.
Ives, P. 2009. Global english, hegemony and education. *Educational Philosophy and Theory* 41 (6): 661–683.
Jagosh, J., and J. Boudreau. 2009. Lost and found in translation. *International Journal of Qualitative Methods* 8 (2): 102–114.
Jepson, D. 2010. The importance of national language as a level of discourse within individuals' theorising of leadership. *Leadership* 6 (4): 425–445.
Jullien, F. 2014. *On the universal*. Cambridge: Polity Press.
Jones, H., and L. Warnock. 2015. When a PhD is not enough: A case study of a UK internship programme to enhance the employability of doctoral researchers. *Higher Education, Skills and Work-Based Learning* 5 (3): 212–227.
Kabiru, C., et al. 2014. Strengthening local health research capacity in Africa. *The Pan African Medical Journal* 17 (Suppl 1): 1–3.
Keim, W., E. Çelik, and V. Wöhrer, eds. 2016. *Global knowledge production in the social sciences*. London: Routledge.
Kemper, K. 2007. The yin and yang of integrative clinical care, education, and research. *Explorer* 3 (1): 37–41.
Kharkhurin, A., and L. Wei. 2015. The role of code-switching in bilingual creativity. *International Journal of Bilingual Education and Bilingualism* 18 (2): 153–169.
Lakoff, G., and M. Johnson. 1980. Conceptual metaphor in everyday language. *The Journal of Philosophy* 77 (8): 453–486.
Larivière, V. 2011. On the shoulders of students? *Scientometrics* 90 (2): 463–481.
Lee, D. 2005. Ensuring academic freedom for students in the classroom. *International Journal of the Humanities* 3 (2): 65–70.
Lemert, C. 1993. Social theory. In *Social theory*, ed. C. Lemert, 1–21. Boulder: Westview Press.
Li, W., and H. Zhu. 2013. Translanguaging identities and ideologies. *Applied Linguistics* 34 (5): 516–535.
Lo Bianco, J. 2010. The importance of language policies and multilingualism for cultural diversity. *International Social Science Journal* 61 (199): 37–67.
Lvovich, N., and S. Kellman. 2015. Literary translingualism: Multilingual identity and creativity. *L2 Journal* 7 (1): 3–5.
Macfarlane, B. 2012. Re-framing student academic freedom. *Higher Education* 63 (6): 719–732.
Madiba, M. 2014. Promoting concept literacy through multilingual glossaries. In *Multilingual teaching and learning in higher education in South Africa*, ed. L. Hibbert and C. van der Walt, 68–87. Clevedon: Multilingual Matters.
Maingueneau, D. 2015. Monolingualism and creativity. *Mètode Science Studies Journal-Annual Review* 6: 115–119.
Makarychev, A., and V. Morozov. 2013. Is "non-Western theory" possible? *International Studies Review* 15 (3): 328–350.
Manathunga, C. 2010. Intercultural postgraduate supervision. *New Zealand Annual Review of Education* 20: 5–23.
Manathunga, C. 2011. Moments of transculturation and assimilation. *Innovations in Education and Teaching International* 48 (4): 367–376.
Marginson, S. 2008. Academic creativity under new public. *Educational Theory* 58 (3): 269–287.
Marginson, S. 2014. Academic freedom. *Frontiers of Education in China* 9 (1): 24–41.

Marker, M. 2004. Theories and disciplines as sites of struggle. *Canadian Journal of Native Education* 28 (1&2): 102–110.
Markovsky, B. 2008. Graduate training in sociological theory and theory construction. *Sociological Perspectives* 51 (2): 423–445.
Marriott, H. 2013. Multilingualism among university staff. *International Journal of Multilingualism* 10 (4): 454–468.
Mayuzumi, K. 2006. The tea ceremony as a decolonizing epistemology healing and Japanese women. *Journal of Transformative Education* 4 (1): 8–26.
Mayuzumi, K., et al. 2007. Transforming diversity in Canadian higher education. *Teaching in Higher Education* 12 (5–6): 581–592.
Mestan, K., and A. Harvey. 2014. The higher education continuum. *Higher Education Review* 46 (2): 61–80.
Mignolo, W. 2003. Globalization and the geopolitics of knowledge. *Nepantla* 4 (1): 97–119.
Montgomery, S. 2000. *Science in translation*. Chicago: University of Chicago Press.
Moore, E. 2016. Conceptualising multilingual higher education in policies, pedagogical designs and classroom practices. *Language, Culture and Curriculum* 29 (1): 22–39.
Moore, R., and J. Muller. 1999. The discourse of 'voice' and the problem of knowledge and identity in the sociology of education. *British Journal of Sociology of Education* 20 (2): 189–206.
Nevárez-La Torre, A. 1999. Developing voice. *Bilingual Research Journal* 23 (4): 451–470.
Ng, S. 2012. Rethinking the mission of internationalization of higher education in the Asia-Pacific region. *Compare* 42 (3): 439–459.
Oliver, R., et al. 2012. Evidence of English language proficiency and academic achievement of non-English-speaking background students. *Higher Education Research and Development* 31 (4): 541–555.
Ozdemir, N.O. 2014. The role of English as a lingua franca in academia. *Procedia: Social and Behavioral Sciences* 141: 74–78.
Parada, F., and J. Peacock. 2015. The quality of doctoral training and employability of doctorate holders: The views of doctoral candidates and junior researchers. In *The European higher education area*, ed. Curaj, A., L. Matei, R. Pricopie, J. Salmi, and P. Scott, 593–612. Dordrecht: Springer.
Paradowski, M. 2011. Multilingualism: Assessing benefits. *In Issues in promoting multilingualism teaching–learning–assessment*, ed. A. Komorowska, 335–354. Warsaw: Foundation for the Development of the Education System.
Pavlenko, A. 2003. I never knew I was a bilingual. *Journal of Language, Identity & Education* 2 (4): 251–268.
Prah, K., and B. Brock-Utne, eds. 2009. *Multilingualism*. Cape Town: Centre for Advanced Studies of African Society.
Prazniak, R. 2010. Menzies and the new chinoiserie. *The Medieval History Journal* 13 (1): 115–130.
Preece, S. 2011. Universities in the Anglophone centre. *Applied Linguistics Review* 2: 121–145.
Price, D. 2004. *Threatening anthropology.* Durham: Duke University Press.
Price, T. 2014. Democracy education. *Journal of the American Association for the Advancement of Curriculum Studies* 10: 1–11.
Rancière, J. 1991. *The ignorant schoolmaster*. Stanford: Stanford University Press.
Rancière, J. 2009. *The future of the image*. London: Verso.
Rayner, G., et al. 2016. Comparing the self-efficacy and writing-related abilities of native and non-native English-speaking students. *Cogent Education* 3 (1): 1179164.
Reay, D. 2015. Academic Viagra. *British Journal of Sociology of Education* 36 (5): 798–801.
Ryan, J. 2011. Teaching and learning for international students. *Teachers and Teaching* 17 (6): 631–648.
Sabir, I., and A. Sabir. 2010. Academic dependency of intellectual labor. *International Journal of Interdisciplinary Social Sciences* 5 (6): 31–41.
Scarino, A. 2014. Situating the challenges in current languages education policy in Australia. *International Journal of Multilingualism* 11 (3): 289–306.

Schaller, C. 2007. Let academic freedom ring. *Technological Horizons in Education* 34 (8): 8.
Schwarzer, D., and M. Fuchs. 2014. Monolingual teacher candidates promoting translingualism. In *Research on preparing preservice teachers to work effectively with emergent bilinguals*, ed. Y. Freeman and D. Freeman, 89–112. Bingley: Emerald.
Sears, A. 2005. *A good book, in theory*. Peterborough: Broadview Press.
Sen, A. 2006. *The argumentative Indian*. London: Penguin.
Sen, A. 2009. *The idea of justice*. London: Allen Lane.
Shen, G. 2014. Science in translation. In *Science and technology in modern China*, ed. J.B. Elman, 93–113. Leiden: Brill.
Singh, M. 2009. Using Chinese knowledge in internationalising research education. *Globalisation, Societies and Education* 7 (2): 185–201.
Singh, M. 2010. Connecting intellectual projects in China and Australia. *Australian Journal of Education* 54 (1): 31–45.
Singh, M. 2011a. Learning from China to internationalise Australian research education. *Innovations in Education and Teaching International* 48 (4): 355–365.
Singh, M. 2011b. Transformative knowledge exchange and critical pedagogy. In *Education, social justice and the legacy of Deakin University*, ed. R. Tinning and K. Sirna, 157–172. Rotterdam: Sense.
Singh, M. 2012. Pedagogies of intellectual equality for connecting with non-Western theories. In *Precarious international multicultural education*, ed. H. Wright et al., 237–258. Rotterdam: Sense.
Singh, M. 2013. Worldly critical theorizing in Euro-American centered teacher education? In *Preparing teachers for the 21st century*, ed. X. Zhu and K. Zeichner, 141–169. Heidelberg: Springer.
Singh, M., and X. Chen. 2012. Internationalising Australian doctoral education programs and pedagogies through engaging Chinese theoretical tools. In Reshaping doctoral education: International approaches and pedagogies, ed. Lee, A., and S. Danby, 187–203. London: Routledge.
Singh, M., and J. Han. 2009. Engaging Chinese ideas through Australian education research. *Discourse: Studies in the Cultural Politics of Education* 30 (4): 397–411.
Singh, M., and X. Huang. 2013. Bourdieu's lessons for internationalising Anglophone education. *Compare* 43 (2): 203–223.
Singh, M., and H. Meng. 2013. Democratising Western research using non-Western theories. *Studies in Higher Education* 38 (6): 907–920.
Singh, M., and M. Shrestha. 2008. International pedagogical structures. In *Researching international pedagogies*, ed. M. Hellsten and A. Reid, 65–82. Dordrecht: Sense.
Singh, M., et al. 2013. Transnational intellectual engagement via cocoon communities. In *Cocoon communities*, ed. M. Korpela and F. Dervin, 59–80. Newcastle: Cambridge Scholars Publishing.
Sohoni, A. 2009. Cultural diversity and non-Western course content in interior design education. *Family and Consumer Sciences Research Journal* 37 (3): 329–343.
Spickard, J. 1998. Ethnocentrism, social theory and Non-Western sociologies of religion toward a Confucian alternative. *International Sociology* 13 (2): 173–194.
Stephan, P., and S. Levin. 2001. Exceptional contributions to U.S. science by the foreign-born and foreign-educated. *Population Research and Policy Review* 20: 59–79.
Sutton, R., and B. Staw. 1995. What theory is not. *Administrative Science Quarterly* 40 (3): 371–384.
Swedberg, R. 2012. On Charles' Peirce's lecture "how to theorize". *Sociological* 2: 1–27.
Swedberg, R. 2016. Before theory comes theorizing or how to make social science more interesting. *The British Journal of Sociology* 67 (1): 5–22.
Tange, H., and P. Kastberg. 2013. Coming to terms with 'double knowing'. *International Journal of Inclusive Education* 17 (1): 1–14.
Tran, L., and N. Nguyen. 2015. Re-imagining teachers' identity and professionalism under the condition of international education. *Teachers and Teaching* 21 (8): 958–973.

Trowler, P., et al. 2005. Freeing the chi of change. *Studies in Higher Education* 30 (4): 427–444.
Van der Walt, C. 2013. *Multilingual higher education*. Clevedon: Multilingual Matters.
Vukovich, D. 2010. China in theory. *Cultural Critique* 76: 148–172.
Weick, K. 1989. Theory construction as disciplined imagination. *Academy of Management Review* 14: 516–531.
Weick, K. 1995. What theory is not, theorizing is. *Administrative Science Quarterly* 40 (3): 385–390.
Wihlborg, M., and C. Teelken. 2014. Striving for uniformity, hoping for innovation and diversification. *Policy Futures in Education* 12 (8): 1084–1100.
Winchester, I. 2013. On seeing our deepest intellectual, educational and practical traditions from a non-Western perspective. *Interchange* 43 (2): 67–69.
Woolworth, S., and V. Thirumurthy. 2012. Promoting cross-cultural competence and awareness in teacher education. *Northwest Passage* 10 (1): 110–117.
Yildiz, Y. 2011. *Beyond the mother tongue*. New York: Fordham University Press.
You, X. 2011. Chinese white-collar workers and multilingual creativity in the diaspora. *World Englishes* 30 (3): 409–427.
Young, M. 2000. Rescuing the sociology of educational knowledge from the extremes of voice discourse. *British Journal of Sociology of Education* 21 (4): 523–536.
Young, M. 2009. Education, globalisation and the 'voice of knowledge'. *Journal of Education and Work* 22 (3): 193–204.
Zhang, W. 2015. Multilingual creativity on China's internet. *World Englishes* 34 (2): 231–246.
Zhao, S. 1996. The beginning of the end or the end of the beginning? *Sociological Forum* 11 (2): 305–318.
Zhou, Y., et al. 2005. Rethinking silence in the classroom. *International Journal of Inclusive Education* 9 (3): 287–311.

Meeting the Cultural and Service Needs of Arabic International Students by Using QFD

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Ahmed Mansour Mohsin and Karen Trimmer

Contents

Abstract

Quality has become an important factor in global competition for many reasons. Intensive global competition and the demand for better quality by customers has led organizations to realize the benefits of providing quality products and services in order to successfully compete and survive. Higher education institutions are one example of these organisations. Higher education institutions work in an intensive competitive environment worldwide driven by increasing demands for learning by local and international students. As a result, the managers of these

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sectors have realized that improving the quality of services is important for achieving customer satisfaction which can help survival in an internationally competitive market. To do this, it is necessary for organizations to know their customers and identify their requirements. To this end, many higher education institutions have adopted principles of total quality management (TQM) to improve their education quality which leads to better performance through involvement of every department to achieve excellence in business. This chapter considers the importance of measuring quality in order to assist universities to proactively manage the design and improvement of the social and academic experiences of postgraduate international students, and plan management decision-making processes to deliver high-quality services in a globalized business of provision of higher education. Higher education institutions must operate effectively and efficiently and be able to deliver quality programs, by seeking to better understand the needs of their customers to be competitive in this market space.

Keywords
Arabic international students · International students · Quality · Quality function deployment · Total quality management · House of quality · Customer satisfaction · Cultural needs · Service needs · Social and academic experiences

Introduction

Higher educational institutions are perceived to offer high education services quality. In particular, Australian universities are among those to which students flock, because they provide a high quality of education, and services that fulfil the needs and expectations of students as important customers by enabling them to achieve customer satisfaction. In this chapter, the major focus is related to Arabic international students who are undertaking study in Australia. Those students are shifting from a teacher-centred environment to learning independently and also experiencing a completely different culture and language in their daily living.

In Australian universities, there is a significant increase in the number of international students, especially those coming from Arab countries. According to records, the number of these students exceeds 14,000 Arabic international students enrolled in all Australian educational institutions. Improving the quality of their social and academic experiences while studying in Australia is crucial to maintain a steady flow of students in the future, as well as university reputations (Azmat et al. 2013). Social and academic experiences are important for the Arabic international students because they come from a different culture which creates a number of challenges, especially in postgraduate study. Understanding the requirements of social and academic issues for those students has a positive effect on their satisfaction which in turn has an effect on future potential students. However, limited attention has been given to using well-documented business measures such as quality function deployment (QFD) as tools in understanding the quality of social and academic experiences of students.

Currently, the international higher education market is increasingly competitive due to the reduction of government funding that requires higher education

institutions to look for other sources of revenue. As a consequence, higher education institutions are reinventing themselves in their efforts to be more internationally attractive to cater to the increasing demands arising from international enrolments (Azmat et al. 2013; Islam and Hasin 2014). Australia has played a vital role in the supply of quality education to international students and other educational industries related to them (Son and Park 2014). It has experienced a substantial increase in the number of Arabic international students enrolled in higher education (Terraschke and Wahid 2011). Australia is the third-largest commercial exporter of higher education services internationally after the United States (US) and the United Kingdom (UK), with one-tenth of the world's international education market and responsible for around $AUD 15 billion in revenue (Harmon 2015).

The internationalization of education is important in Australia and it is an integral aspect of the Australian economy (Australian Bureau of Statistics (ABS) 2011). Presently, there is increased competition around the world among universities to attract more international students, as they are full fee paying students and the revenue is used to support the quality of education provided (ABS 2011). This places an obligation on higher education institutions to identify and look at the requirements of international students to properly contextualize these expectations in relation to the services and support they are able to provide. International students, including Arabic international students, bring their own expectations about teaching and learning, which are culture-bound and different (Alhazmi and Nyland 2010). Heading to study overseas is not an easy task. There are language differences, dietary differences, normative and sector systemic differences that at times place international students in conflict with university requirements, codes of conduct, learning and teaching practices, and general expectations. As in USA (Heyn 2013), studies of international students in Australia have focused mostly on students from Asia (Al-Mansouri 2014). Overall, few studies can be found in the literature that address specific issues of culturally different subgroups of international students such as Arabic international students (Heyn 2013; Shaw 2009). None of these have used QFD to improve the social and academic experiences of international students in Australia. As Heyn (2013) suggests, most of the research is centred on mental health and psychological concerns with acculturation.

Arabic international students face similar challenges to other international students (Terkla et al. 2005); however, there are particular differences that require specific attention. These include the difference in educational systems and expectations from students between Arabic countries and those in the West such as Australia (Heyn 2013), and not seeing themselves as a locus of control for their learning (Silverman and Casazza 2000) as cited in Shaw (2009). Many international students from nonnative English speaking (NNES) backgrounds are not familiar, and find it hard to cope, with the Western learning system with its expectation that learners are independent (Ringer et al. 2010). Issues commonly faced by international students include:

1. Level of competency with the English language, although they may have passed the English language requirement along with difficulties in being understood by the lecturers (Bone and Reid 2013)

2. The difference in pedagogical approach between Western universities and home countries where there is a teacher-centred classroom environment (Alshehri 2001) in contrast to the learner-centered (Islam and Borland 2006) approach to assessments and assignments
3. Cultural appropriateness of some of the course content which can result in inadequate performance of students who struggle to adjust to Australian learning environments (Burke and Wyatt-Smith 1996)

International students need to be aware of and understand the principles underpinning their new learning experiences and their teachers' expectations. Conversely, universities need to be aware of these differences and provide avenues that mitigate their unsurprising critical views regarding the typical Western learning environment and its seemingly conflicting underpinning philosophy. "If a university enrols students from linguistically and culturally different backgrounds then it is the university's duty to develop the knowledge and capabilities of these students in order for them to be able to respond effectively to the new cultural contexts in which they are studying" (Crichton et al. 2004, p. 71). Further, university educators themselves may not be aware of the impact that cultural and linguistic differences may have on international students' learning experiences.

Improving the quality of the educational services requires understanding student's needs, specifically international students who may be considered to be the most important customers for educational organizations these days, because they not only contribute to the profit of this sector, but also to reputation which is increasingly essential for educational organizations. Arabic international students experience different kinds of services when they start studying at Australian universities. According to Cuthbert (1996), the essential factor in higher education is the quality of the service experience. There are a number of areas where the transactional nature of the relationship lends itself to a customer satisfaction perspective in the student services and support areas (admissions and enrolment management, bursar's office/financial aid, bookstore, orientation, dining services, housing, student activities, counseling and health services, career counseling, international students office, library, learning centers, etc.) and to a lesser extent in academic areas (research, academic integrity/appeals, academic advisement, etc.), depending on organizational context (Hines 1984).

This chapter refers to a study that will focus on improving the quality of the postgraduate student experience for international students at Australian higher education institutions through the application of QFD. The QFD technique has been introduced and used in many fields, such as government, banking and accounting, health care, hospitality, information technology, and research (Andronikidis et al. 2009; Singh et al. 2008; Vinayak and Kodali 2013). QFD can be more than a planning tool. If properly deployed, it can become a key element of an organization's systemic learning process and quality system (Huber 1991; Tague 2005). The QFD approach and its utilization of the voice of the customer and the language they use can be an integral part of quality control measures (Fuchs 1999) throughout the university. Such an approach provides

higher education institutions with a systematic process to identify and respond to student needs in a timely and more proactive manner – addressing a challenge many universities face throughout the world (Zeine et al. 2014). QFD's benefits are that it provides an additional informational link that identifies requirements that processes should address, and establishes a process whereby customer needs can be identified and translated into action in an ever-changing environment (Bouchereau and Rowlands 2000). As Early and Coletti (1999) pointed out:

> *Customer needs keep changing. There is no such thing as a final list of customer needs... [Forces such as technology, competition, social change, and so on can create new customer needs or may change the priority given to existing needs]* (p. 3.16).

QFD is people-based, bringing together customers and an organization's multi-functional teams to help formulate how needs are either directly addressed, or trade-offs negotiated between customer wants and what institutions can afford to do (Bouchereau and Rowlands 2000). There are logistical as well as support issues that impact the environment, engagement, and satisfaction of international students. Historical practice at Australian universities has been to provide support services that act as an intermediary between international students, their families, and the university's learning and teaching communities (Robertson et al. 2000). However, the literature suggests that efforts from these units have not been as successful as they should be (Slethaug and Manjula 2012). Investigating the usefulness of QFD techniques to improve the experiences of Arabic international students paves the way to determining its usefulness in resolving related issues with other international student subgroups by providing higher education institutions with a formal approach to capturing and responding to the customer's needs to improve the quality of the services (academic, personal, and social) and increase the customer's satisfaction sequentially. To sum up, it is clear that there has been little research performed about Arabic internatioanal students experiences and their requirements to succeed in Western education contexts.

Literature Review

This section presents the key themes in the literature that apply to the study discussed in this chapter. The aim of this section is to build the theoretical foundation upon which the study is based by reviewing the relevant literature.

Theories Underpinning the Research

The study's conceptual framework is underpinned by the two major theories: total quality management (TQM) theory and social identity theory. These are contextualized into the higher education environment by Astin's (1985, 1993) inputs-environment-outcomes model of student engagement and learning.

TQM

Quality refers to the features and characteristics of a product or service that bear on its ability to satisfy stated and implied requirements of the customer (Singal 2012). TQM is a philosophy which promotes an organization-wide effort to achieve quality and whose aim is to actively involve staff in the pursuit of quality and to infuse in them the spirit of continuous improvement. It focuses primarily on total satisfaction for both internal and external customers within a managerial environment that seeks continuous improvement of all systems (Hongen and Xianwei 1996) focusing on continuous improvement of skills, team work, processes, product and service quality, and customer service (CS) (Singal 2012). This definition is anchored to organizational culture because successful TQM is deeply embedded in every aspect of organizational life and calling for the satisfaction of customers. To achieve this, three components of TQM are essential (Singal 2012):

- Meeting customer requirements (CR)
- Continuous improvement through management processes
- Involvement of all employees

One of the most powerful tools to appear under the TQM umbrella is QFD (Jiang et al. 2007; Murgatroyd and Morgan 1993; Shekhar and Arora 2012). QFD highlights TQM's continuous customer-centred employee-driven improvement approach. "Delighting the customer" is the rule for survival in the long run and is its core message (Sahney et al. 2004a).

TQM in Higher Education

Although quality has always been a focus for higher education institutions globally, defining quality in higher education remains a contested issue (Kalayci et al. 2012). The concept of quality when applied to higher education is a complex concept that has no conclusive definition (Marshall 1998; Sahney et al. 2006). TQM in higher education institutions is not a simple issue based on the inputs, processes, and outputs that make up a higher education institution (Qureshi et al. 2012; Sahney et al. 2004a).

Intangibility and lack of physical evidence of service makes perceptions of service quality a complex proposition and poses difficulties for measurement and analysis (Mahapatra and Khan 2007; Parasuraman et al. 1985). The outcomes are linked to transformation of knowledge in individuals and change in their behavior (Pascarella and Terenzini 2005). Because the transformation and the environments generating the transformation focus on so many different issues, there is no mutually accepted definition of quality which can be applied to the higher education sector (Qureshi et al. 2012). Nevertheless, numerous universities strive to improve the quality of their education systems and make themselves distinctive from the rest by applying TQM tools and techniques (Aly and Akpovi 2001).

Customers in Higher Education

Generally, in a service sector, a customer is anyone being served. Customers may be both internal and external, depending on whether they are located within or

outside the organization. Quality starts with customers and is defined by customers (Jamali et al. 2010). Indeed, Scrabec (2000, p. 298) believes that the "the inability to classify customers is at the heart of failed TQM efforts in education." Identifying customers is essential in order to determine specific needs and maintain customer-oriented service. In higher education, the various categories of customers have been identified and correlated with inputs. As the student is also part of the input, among others (e.g., employer), the best method of resolving different interests is to recognize their existence and to look for issues that unite the different parties (Sahney et al. 2004b). Thus, despite higher education having a number of complementary and contradictory issues about defining the higher education customer (e.g., due to demands for increasing student enrolments, pressure to satisfy the students' desires for higher grades, and student evaluations becoming the primary indicator for teaching effectiveness) (Bailey and Dangerfield 2000; Eagle and Brennan 2007; Svensson and Wood 2007), there are distinct transactional aspects within a university suggesting the appropriateness of identifying students as one of the principal customers served by higher education.

Social Identity Theory

Studies by Finney and Finney (2010), Shah et al. (2013), and Watjatrakul (2014) show that student perceptions are linked to engagement, with satisfaction linked to the improvement of service quality and ease in achieving course outcomes. The theory of social identity is relevant to the current study because it points to the importance of understanding the feelings of international students and its relevance to their sense of satisfaction and wellbeing.

Social identity theory (Tajfel and Turner 1986) provides a framework through which international students and Arabic international students perceptions can be understood, assisting universities in the challenge of identifying and meeting their needs. It provides a coherent, intergroup perspective relating to a person's identification with and within the organization and the organizational commitment (Ashforth and Mael 1989; Tajfel and Turner 1979) based on their interactions and associated success or failure. International students may tend to limit their opportunity to interact with others from outside their circle or who have a different cultural background, impacting on capacity to establish a common understanding about many issues. Arabic international students, as a group of international students, can therefore find themselves experiencing less communication with the local community, which is likely to have a serious impact on their development of English for academic and social and purposes (Al-Mansouri 2014).

Astin's I-E-O Model

Astin's (1985, 1993) input-evaluation-outcomes model provides a conceptual and methodological guide to the study of the effects higher education institutions have on students, emphasizing the learning and teaching aspects of university activity (Inkelas et al. 2011; Pascarella et al. 2005). It highlights the longitudinal nature of the higher education learning experience and the interactivity between student

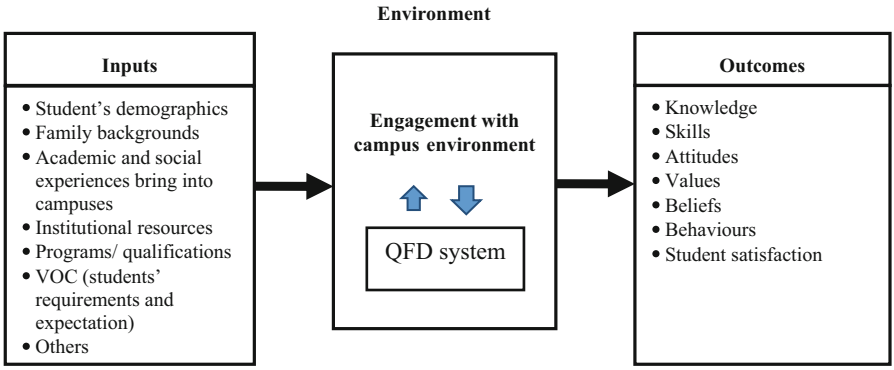

Fig. 1 Astin's I-E-O model (Source: Adapted from (Padró and Kek 2013))

background characteristics and the higher education environment, placing these in the broader institution framework context (Kelly 1996). "The I-E-O model was designed to address the basic methodological problem with all nonexperimental studies in the social sciences, namely the nonrandom assignment of people (inputs) to programs (environments)" (Astin and Sax 1988, p. 252) .

Universities are systems of interrelated components that transact within complex and interrelated internal and external environments, requiring them to continually assess organizational performance and effectiveness (Hayes 2002) for organizational learning and accountability purposes.

Fig. 1 illustrates the various elements of Astin's I-E-O model and where QFD fits within Astin's model. Inputs influence the environmental experience of students in relationship of achieving desired outcomes (institutional and personal).

Theoretical Background of QFD

Origination of QFD

The terms quality function deployment are transliteration of the Japanese *Hin Shitsu* (quality), *Ki Nou* (function), and *Ten Kai* (deployment) (Singh et al. 2008). QFD originated in the late 1960s in Japan (Akao and Mazur 2003; Foster 2010; Vinayak and Kodali 2013). It was introduced to the United States (USA) in 1983 and then to the remainder of the Western world, finding widespread acceptance as an effective quality tool (Goetsch and Davis 2010; Prabhushankar et al. 2015; Singh et al. 2008). It has been widely applied in aerospace, software, engineering, construction, and marketing. In the United Kingdom (UK), the uptake of QFD techniques is more recent and there are only a few scattered cases of companies trying to experiment with it (Zairi and Youssef 1995). QFD has also been successfully used in service sectors such as government, education, e-banking, accounting, healthcare, hospitality, public sector, retail, technical libraries, and information services (Andronikidis et al. 2009; Sahney et al. 2004a). The literature provides examples of QFD use in

higher education from as far back as the early 1990s. It has been applied for analysis and design in the fields of education quality, service quality, educational research, software development, teaching effectiveness, curriculum design, training, instructional resources, and marketing planning (Chien and Su 2003; Eftekhar et al. 2012; Karanjekar et al. 2013b; Mukaddes et al. 2012; Prabhushankar et al. 2015).

QFD Concept

Quality function deployment (QFD) is an important tool used in TQM, which can be applied for process and design improvement in manufacturing or services sectors (Karanjekar et al. 2013a; Qureshi et al. 2012; Raharjo et al. 2007; Shen et al. 2000; Singh et al. 2008; Tsinidou et al. 2010). QFD translates the voice of customer (VOC), or CR, into the final product and/or service quality to assure customer satisfaction (CS) (Akao 1990). The main goal of QFD is enhanced CS, organizational integration of expressed customer wants and needs, and improved profitability (Griffin 1992). It is a productivity improvement tool that helps organizations to achieve and maintain competitive advantages by striving for world-class performance (Vinayak and Kodali 2013). QFD is developed by involvement of a cross-functional team and provides an interdepartmental approach to communication that creates a common quality focus across all functions/operations in an organization (Andronikidis et al. 2009). Teams work to define the customer, and the customer's wants (the "whats"), the "hows" (the mechanisms to satisfy the customer's wants) and the relationships between these "whats" and "hows," assigning value weights to each using a matrix known as a "House of Quality" (Pitman et al. 1996).

QFD works within quality systems that aim to satisfy the customer (Mazur 1996). It concentrates on maximizing CS and delivering "value" by discovering spoken and unspoken CR, translating CR into actionable service or product features, and communicating them throughout an organization (Mazur 1993). In other words, QFD can be referred to as designed-in quality rather than traditional inspected-in quality (Chan and Wu 2002). The three main goals in implementing QFD are (Gupta et al. 2012, p. 896):

1. Prioritize spoken and unspoken customer wants and needs.
2. Translate these needs into technical characteristics and specifications.
3. Build and deliver a quality product or service by focusing everybody toward CS.

To achieve all these goals, Motwani et al. (1996) stressed that QFD process requires:

1. Involvement of a cross-functional team
2. The QFD process itself
3. The visual matrix that guides the process

The House of Quality

QFD involves the construction of one or more matrices, called "quality tables" that guide the decisions that must be made throughout development process (Cohen 1995). The first of these "quality tables," called "The House of Quality (HOQ)," is

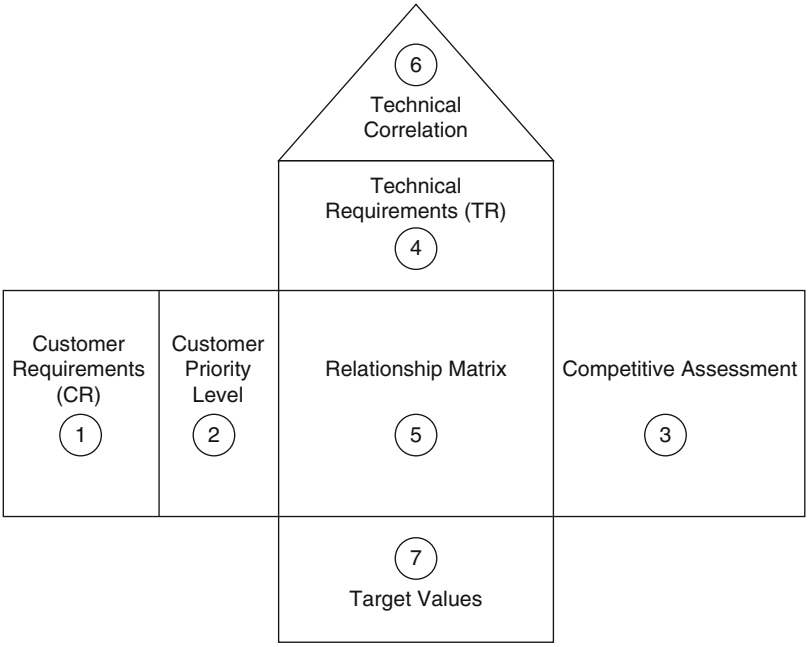

Fig. 2 General House of Quality (Source: Garibay et al. 2010; Russel and Taylor 2003)

the most commonly used matrix in QFD (Andronikidis et al. 2009). Essentially, HOQ is the central component in constructing QFD (An 2011). The HOQ matrix style chart correlates the identified customer attributes ("whats") with the technical requirements (TR) ("hows"). A multidisciplinary team draws upon market research and benchmarking data to translate customer requirements into an appropriate number of prioritized technical targets (Prabhushankar et al. 2015). A typical HOQ is shown in Fig. 2. Building the House of Quality involves the following steps:

1. Identify a list of customer requirements (CR)
2. Develop a listing of technical requirements (TR)
3. Develop a relationship matrix between the CR and the TR
4. Planning matrix
5. Technical correlation matrix
6. Priorities of technical requirements (TR) matrix

Applications of QFD in Higher Education

The literature on the use of QFD in higher education can be categorized into four major parts: curriculum design, teaching effectiveness, educational service quality, and other applications (Ahmed 2006; Eftekhar et al. 2012; Hwarng and Teo 2001;

Mukaddes et al. 2012). For example, the literature on the application of QFD to curriculum design is increasing (Gonzalez et al. 2011). Teaching effectiveness QFD studies concentrate on programs as well as lifelong learning (Mukaddes et al. 2010). QFD has proven to be an effective tool for translating the student's requirements into teaching techniques (Mukaddes et al. 2012). Studies on educational service quality looked at improvement by identifying the gaps between perceived and expected quality by the students as users. Based on the findings of these studies, QFD is an effective approach for translating stakeholders' needs into technical requirements. A review of the literature on the use of QFD in higher education identified two gaps:

- Limited attention has been given to its use regarding the interaction between higher education institutions and international students.
- Most studies are based on single institutions and not at the higher education system level.

Research Methodology

This research is utilizing a mixed methods approach based on application of the House of Quality (HOQ) as the main tool of QFD technique. Per QFD methodology, this research will collect qualitative data from Arabic international students (for establishing CRs) and relevant staff members (for identifying TRs) and then translate it into quantitative data to calculate the rest of the QFD matrices.

Research Framework

Figure 3 illustrates the research process utilized in this study. It is based on the HOQ as a main matrix of QFD, with focus groups as the basis for developing key criteria and interviews to provide data for predictive formulae that are the basis of QFD planning and decision making. Student's requirements (SRs) and Institutional requirements (IRs) are informed by the elements of Astin's (1985, 1993) I-E-O model as these help frame the key input, environmental, and outcome linkages that characterize these requirements and provide the context for the results of the QFD process.

Application of the House of Quality Matrix

QFD is the method proposed for the design and improvement of educational experiences based on student requirements and benchmarking obtained from universities in Queensland. The construction of the QFD matrix is illustrated through the HOQ detailed description in Fig. 4. In this figure, the QFD has six parts that have to be executed in order to reach the desired outcome of the technical priorities. Building the QFD matrix involves the following steps:

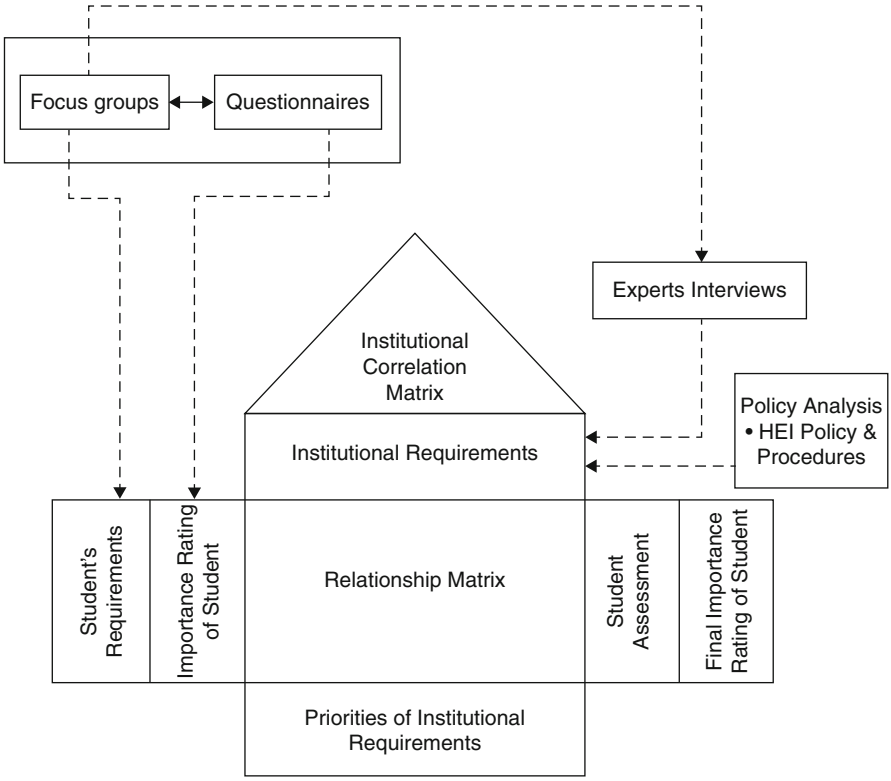

Fig. 3 Research framework (Source: Adapted from (Yeh and Chen 2014)

Step-1: To begin the QFD process, the university seeks to capture the needs of the students. The voices of the students and their requirements are collected and verified through questions and focus groups discussions with Arabic international students who are enrolled in different schools in the university.

Step-2: This step deals with the Institutional Requirements (IR) that are associated with the student's needs and expectations. The goal of the HOQ is to design or change the design of a service in a way that meets or exceeds the student's requirements. The QFD team must come up with service element or social and academic experiences techniques that will affect one or more of the student requirements. The information on IR is collected from the staff. Each IR must directly affect a student perception and be expressed in measurable terms. The QFD team then summarises the suggestions and reduces their number by combining different techniques.

Step-3: This step develops the relationship matrix showing the level of association/influence between each student need and each institutional requirement the university is providing. These relationships coefficients are calculated and represented in the form of symbols which are further quantified to show the strength of association (Talib and Maguad 2011).

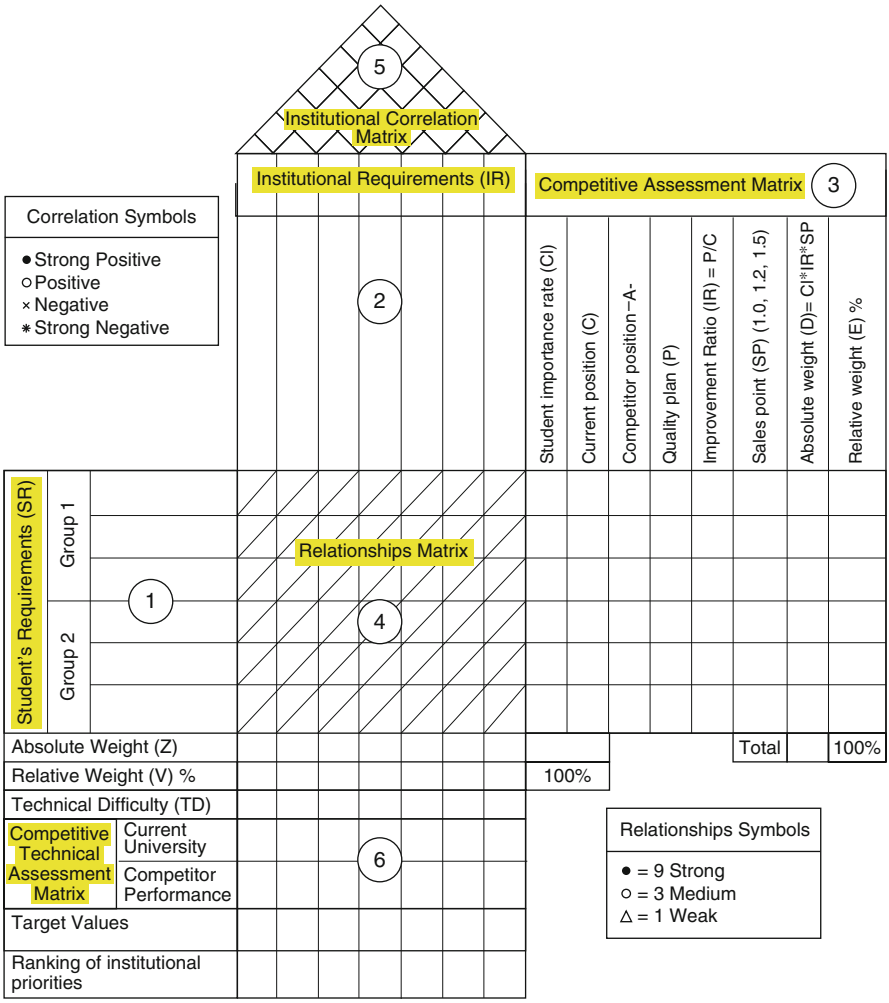

Fig. 4 The House of Quality – detailed description (Source: Adapted from (Talib and Maguad 2011)

- ● = 9 (Strong association)
- ○ = 3 (Somewhat association/medium relationship)
- Δ = 1 (Weak association)
- Blank = 0 (No association or relationship)

The blank quadrant represents no relationship. The relationship matrix is completed by the QFD team/focus group (Mukaddes et al. 2012).

Step-4: This step, being the roof of the HOQ, shows intercorrelations between the IR provided by the university. The purpose of calculating intercorrelations is to show

whether there is association, supporting behavior or conflict, between each of the institutional requirements. The correlation coefficients are calculated and represented in the form of symbols which are further represented by the numbers to show the direction and the strength of association. This interrelationship matrix is also prepared by the QFD team/focus group (Chin et al. 2001; Mukaddes et al. 2012; Talib and Maguad 2011).

- • = (Strong positive association)
- ○ = (Positive association)
- × = (Negative association)
- * = (Strong negative association)

Step-5: This step is used for developing the desires/priority-based student requirements. These are categorized into columns of the HOQ in order of importance to the customer. The students' focus group rates the importance of each of the student requirements. These ratings are assigned 1 through 5, with 1 indicating the least importance to students and 5 being very essential to students. The target values are set on scale 1 through 5 with 1 being "no change," 3 "improvement is needed," and 5 "make it better than the competitor."

- **Importance to customer:** A focus group ranks each customer (student) requirement by assigning it a rating. Numbers 1–5 are listed in the importance to student column to indicate a rating 1 for least important and 5 for very important (Talib and Maguad 2011).
- **Target value:** The target value column is on the same scale as the customer competitive assessment (1 for worst and 5 for best). This is where the QFD team decides whether they want to keep their service unchanged, improve the service, or make the service better than the competitor.
- **Scale-up factor:** The scale-up factor is the ratio of the target value to the service rating given in the customer competitive assessment (Mukaddes et al. 2012). The higher the number, the more effort will be needed to achieve the target. The important consideration is deciding whether the difference between the current level of service and the target rating can be explained and achieved. It is calculated by dividing the planned level by the current university rating in the following formula (Chin et al. 2001; Hamza 2011):

$$SF_i = T_i / N_i \tag{1}$$

where T_i is the target value by assessment of the university position for achieving the students' requirement and N_i is the current assessment of the university position for achieving the students' requirement.

- **Service point (sales point):** The service point tells the QFD team how well a student requirement will contribute to service improvement. The objective is to promote the best student requirements and any remaining student requirements

that will help improve the service. Here, the service point is a value between 1.0 and 2.0 (Mukaddes et al. 2012).

– **Absolute weight:** Finally, the absolute weight is calculated by multiplying the importance to customer, scale-up factor, and service point (Aghlmand et al. 2010; Mukaddes et al. 2012; Talib and Maguad 2011).

$$\text{Absolute weight } (D_i) = \text{Importance to customer } (C_i) \times \text{Scale-up factor } (SF_i) \times \text{Service point } (SP_i) \quad (2)$$

Relative weight: The relative weight for the *i*th customer descriptor is then given by replacing the degree of importance for the customer

$$Ei = \frac{Di}{\sum_{i=0}^{n} Di} \cdot 100 \quad (3)$$

where E_i = the relative weight for the *i*th customer descriptor.

Step-6: The prioritized institutional descriptors contain degree of technical difficulty, target value, and absolute and relative weights. The QFD team identifies institutional descriptors that are most needed to fulfil student requirements and require further improvement.

– **Degree of difficulty:** The degree of the institutional difficulty helps to evaluate the ability to implement techniques to fulfil student's requirements. A difficulty rating (1–5 point scale, 5 being very difficult and risky) is calculated for each subsystem/subassembly/part requirement or institutional characteristics (Mukaddes et al. 2010; Mukaddes et al. 2012).
– **Target value:** This objective measure defines values that must be obtained to achieve the institutional descriptor. How much it takes to meet or exceed the students' expectations is answered by evaluating all the information entered into the HOQ and selecting target values.
– **Absolute weight:** The last two rows of prioritized institutional descriptors are the absolute weight and relative weight. Absolute weight for the *j*th institutional descriptor is then given by (Chan and Wu 2005; Talib and Maguad 2011):

$$Z_j = \sum_{i=0}^{n} R_{ij} \quad E_i \quad (4)$$

Z_j = Absolute weight row vector for the institutional requirement.
R_{ij} = Strength of association to the relationships matrix ($i = 1 \ldots n$ and $j = 1 \ldots m$).
m = number of institutional requirement and n = number of student requirement.

Relative weights: In a similar manner, the relative weight for the *j*th institutional descriptor is then given by replacing the degree of importance for the SR with the absolute weight for the SR. The relative weights are found by calculating the sum

of the products of the relationships between students and IR and absolute weight of the student's requirements.

$$V_i = \frac{Z_j}{\sum_{j=0}^{m} Z_j} \cdot 100 \tag{5}$$

where V_j = Relative weights for the institutional requirement row vector.

The QFD team then identifies the prioritized institutional requirement which contains the degree of difficulty, target value, and absolute and relative weights. Ultimately, QFD team identifies IRs that are most needed to fulfil the student requirements and need further improvement. In other words, the higher relative weight indicates giving the more concentration by university on the IRs to satisfy the student's requirements (Foster and Ganguly 2007; Mukaddes et al. 2010).

Data Analysis Techniques

For the qualitative data, all focus groups and semistructured interviews will be audio recorded for later analysis. First, data will be transcribed and then stored. Second, the data will be analyzed using NVivo. For the quantitative data, the statistical software package SPSS version 22 will be used. Initially, descriptive statistics for data gathered through the questionnaires will be analyzed using IPA (Importance-Performance Analysis) to contextualize and transform the data into quantitative formulae to complete the QFD matrix.

Discussion and Recommendations

This chapter and the associated study demonstrate that the QFD technique can be used to assess and fulfil students' requirements by evaluating the effectiveness of social and academic experinces of postgraduate Arabic students in higher education. In this regard, the application of the QFD tool for improvement of educational experinces clearly implies a paradigm shift from the view of students as passive customers of information to active participants in the achievement of educational goals. The developed HOQ reveals the needs of the students and the characteristics of the discipline-specific quality service processes. This is achieved by the QFD team interacting with the Arabic students during their postgraduate studies and delivering quality services. This chapter highlights the need to reduce negative experiences of postgraduate Arabic students through better understanding their requirements via the voice of customer and to therefore deliver better value to them as customers. Further, university management is able to participate, plan, and allocate resources to achieve measurable results. Application of QFD will therefore be useful in for postgraduate and other service areas within higher education

institutions across Australia and other service industries. However, prior to applying QFD, organizations need greater awareness of the process and the benefits that could result from use of QFD.

There are three main recommendations for higher education institutions across Australia that arise from the study and techniques discussed in this chapter:

1. Adopting the QFD technique in higher education and other service industries can be a powerful tool for improvement of the service operation.
2. QFD may be used to track and measure quality in performance of higher education institutions, providing the opportunity to investigate whether continuous improvements in service can lead to better business performance.
3. Marketing has a limited role in achieving total quality management in higher education, but QFD can offer a niche to benefit marketing efforts, as well as advance overall organizational objectives by developing better services that meet customer demands.

References

Aghlmand, S., A. Lameei, and Small, R. 2010. A hands-on experience of the voice of customer analysis in maternity care from Iran. *International Journal of Health Care Quality Assurance* 23 (2): 153–170.

Ahmed, S. 2006. QFD application to improve management education at KIMEP. *Issues in Information Systems* 7 (1): 193–198.

Akao, Y. 1990. *Quality Function Deployment*. Cambridge, MA: Productivity Press.

Akao, Y., and Mazur, G. H. 2003. The leading edge in QFD: Past, present and future. *International Journal of Quality & Reliability Management* 20 (1): 20–35.

Al-Mansouri, B. 2014. *An investigation of the social and academic experiences of Arabic international students in Australian tertiary education.* (Doctor of Philosophy), University of Southern Queensland, Toowoomba, QLD. https://eprints.usq.edu.au/id/eprint/27861

Alhazmi, A., and Nyland, B. 2010. Saudi international students in Australia and intercultural engagement: A study of transitioning from a gender segregated culture to a mixed gender environment. Paper presented at the *21st ISANA International Education Conference*, Melbourne.

Alshehri, M.Y. 2001. Medical curriculum in Saudi medical colleges: current and future perspectives. *Annals of Saudi Medicine* 21 (5/6): 320–323.

Aly, N., and Akpovi, J. 2001. Total quality management in California public higher education. *Quality Assurance in Education* 9 (3): 127–131.

An, Y. 2011. Application of quality function deployment to higher education. Paper presented at the *2011 International Conference on Management and Service Science (MASS)*, Wuhan, China.

Andronikidis, A., Georgiou, A. C., Gotzamani, K., and Kamvysi, K. 2009. The application of quality function deployment in service quality management. *The TQM Journal* 21 (4): 319–333.

Ashforth, B. E., and Mael, F. 1989. Social identity theory and the organization. *The Academy of Management Review* 14 (1): 20–39.

Astin, A.W. 1985. *Achieving educational excellence: A critical assessment of priorities and practices in higher education*. San Francisco: Jossey-Bass.

Astin, A.W. 1993. *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.

Astin, A.W., and Sax, L. J. 1988. How undergraduates are affected by service participation. *Journal of College Student Development* 39 (3): 251–263.

Australian Bureau of Statistics. 2011. Australian social trends. http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4102.0Main+Features20Dec+2011.

Azmat, F., Osborne, A., Le Rossignol, K., Jogulu, U.,Rentschler, R., Robottom, I., and Malathy, V. 2013. Understanding aspirations and expectations of international students in Australian higher education. *Asia Pacific Journal of Education* 33 (1): 97–111. https://doi.org/10.1080/02188791.2012.751897

Bailey, J.J., and Dangerfield, B. 2000. Applying the distinction between market-oriented and customer-oriented strategic perspectives to business school strategy. *Journal of Education for Business* 75 (3): 183–187.

Bone, E., and Reid, R. 2013. First course at university: Assessing the impact of student age, nationality and learning style. *The International Journal of the First Year in Higher Education* 4 (1): 95–107.

Bouchereau, V., and Rowlands, H. 2000. Methods and techniques to help quality function deployment (QFD). *Benchmarking: An International Journal* 7 (1): 8–20.

Burke, E., and Wyatt-Smith, C. 1996. Academic and non-academic difficulties: Perceptions of graduate non-English speaking background students. *The International Journal of the First Year in Higher Education* 4 (1): 95–107.

Chan, L.-K., and Wu, M. L. 2002. Quality function deployment: A comprehensive review of its concepts and methods. *Quality Engineering* 15 (1): 23–35.

Chan, L.-K., and Wu, M. L. 2005. A systematic approach to quality function deployment with a full illustrative example. *Omega* 33 (2): 119–139.

Chien, T.-K., and Su, C-T. 2003. Using the QFD concept to resolve customer satisfaction strategy decisions. *International Journal of Quality & Reliability Management* 20 (3): 345–359.

Chin, K.-S., Pun, K-F., Leung, W., and Lau, H. 2001. A quality function deployment approach for improving technical library and information services: A case study. *Library Management* 22 (4/5): 195–204.

Cohen, L. 1995. *Quality function deployment: How to make QFD work for you*. Reading, MA: Addison-Wesley.

Crichton, J., Paige, M., Papademetre, L., and Scarino, A. 2004. *Integrated resources for intercultural teaching and learning in the context of internationalisation in higher education.* Melina W.,: Research Centre for Languages and Cultures Education, University of South Australia.

Cuthbert, P.F. 1996. Managing service quality in HE: Is SERVQUAL the answer? Part 1. *Managing Service Quality* 6 (2): 11–16.

Eagle, L., and Brennan, R. 2007. Are students customers? TQM and marketing perspectives. *Quality Assurance in Education* 15 (1): 44–60.

Early, J.F., and Coletti, O. J. 1999. The quality planning process. In *Juran's quality handbook,* ed. Juran, J. M., Godfrey, A. Blanton, Hoogstoel, R. E. and Schilling, 5th ed., 3.1–3.50. New York: McGraw-Hill.

Eftekhar, F., Mansouri, S., and Heidarnia, S. 2012. The application of quality management in e-learning, by QFD technique and based on customers' needs (A case study in an Iranian University). Paper presented at the *6th National and 3rd International Conference of E-Learningand E-Teaching (ICELET 2012),* Tehran, Iran.

Finney, T.G., and Finney, R. Z. 2010. Are students their universities' customers? An exploratory study. *Education & Training* 52 (4): 276–291.

Foster, S.T. 2010. *Managing quality: Integrating the supply chain*. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall.

Foster, S.T., and Ganguly, K. K. 2007. *Managing quality: Integrating the supply chain*. Upper Saddle River, NJ: Pearson Prentice Hall.

Fuchs, E. 1999. Customer service. In *Juran's quality handbook*, ed. Juran J. M., Godfrey, A. Blanton, Hoogstoel, R. E. and Schilling, 5th ed., 25.21–25.28. New York: McGraw-Hill.

Garibay, C., Gutiérrez, H., and Figueroa, A. 2010. Evaluation of a digital library by means of quality function deployment (QFD) and the Kano model. *The Journal of Academic Librarianship*, 36 (2): 125-132.

Goetsch, D., and Davis, S. 2010. *Quality management for organizational excellence: Introduction to total quality.* 6th ed. Hoboken, NJ: Pearson.

Gonzalez, M. E., Quesada, G., Mueller, J., and Mueller, R. D. 2011. International business curriculum design: Identifying the voice of the customer using QFD. *Journal of International Education in Business* 4 (1): 6–29.

Griffin, A. 1992. Evaluating QFD's use in US firms as a process for developing products. *Journal of Product Innovation Management* 9 (3): 171–187.

Gupta, R., Gupta, S., and Nagi, K. 2012. Analysis & designing an engineering course using QFD. *International Journal of Modern Engineering Research (IJMER)* 2 (3): 896–901.

Hamza, R.M.A. 2011. Enhancing quality of vocational training outcome to satisfy the labor market demands in Kuwait by using quality function deployment method (QFD). *Journal of Industrial Engineering and Management* 4 (2): 387–402.

Harmon, G. 2015. Australia as an higher education exporter. *International Higher Education* 42: 14–16.

Hayes, J. 2002. *The theory and practice of change management*. New York: Palgrave.

Heyn, M. E. 2013. Experiences of male Saudi Arabian international students in the United States (Doctor of Philosophy). Western Michigan University, Kalamazoo, Michigan.

Hines, E.R. 1984. Delivery systems and the institutional context. In *Developmental academic advising*, ed. Winston, R. B., Miller, J. T. K., Ender, S. C., and Grites, T. J., and Associates 317–346. San Francisco: Jossey-Bass.

Hongen, L., and Xianwei, Z. 1996. A systematic planning approach to implementing total quality management through quality function deployment technique. *Computers & Industrial Engineering* 31 (3): 747–751.

Huber, G. 1991. Organizational learning: The contributing processes and the literature. *Organization Science* 2 (10): 88–115.

Hwarng, H.B., and Teo, C. 2001. Translating customers' voices into operations requirements-a QFD application in higher education. *International Journal of Quality & Reliability Management* 18 (2): 195–226.

Inkelas, K. K., Rine, P. J., Swan, A., Jones, J., and Perry, N. 2011. Evidence-based scholarship of teaching & learning: A literature review and preliminary conceptual model. Paper presented at the *Annual Meeting of the Association for the Study of Higher Education November 2011*, Charlotte, NC.

Islam, K.D., and Hasin, A. A. 2014. A qualitative transfer of the requirements of teachers into technical requirements: Use of house of quality (HOQ) matrix in quality function deployment (QFD). *Merit Reserach Journal of Business and Management* 2 (1): 7–12.

Islam, W., and Borland, H. 2006. South Asian students' adaptation experiences in an Australian postgraduate coursework environment. Paper presented at the *17th ISANA International Education Association Conference Proceedings,* Sydney. Australia.

Jamali, R., Aramoon, H., and Mansoori, H. 2010. Dynamic quality function deployment in higher education. *Jordan journal of Medchanical and Industrial Engineering (JJMIE)* 4 (4): 191–199.

Jiang, J.-C., Shiu, M-L., and Tu, M.-H. 2007. Quality function deployment (QFD) technology designed for contract manufacturing. *The TQM Magazine* 19 (4): 291–307.

Kalayci, N., Watty, K., and Hayirsever, F. 2012. Perceptions of quality in higher education: A comparative study of Turkish and Australian business academics. *Quality in Higher Education* 18 (2): 149–167.

Karanjekar, S.B., Lakhe, R. R., and Deshpande, V. S. 2013a. QFD applications in education: A literature review. *International Journal of Basic and Advanced Research* 2 (6): 124–132.

Karanjekar, S. B., Lakhe, R. R., and Deshpande, V. S. 2013b. A QFD framework for translating customer requirements into key operational activities in technical education sector. Paper presented at the *International Journal of Engineering Research and Technology.*

Kelly, L. J. 1996. Implementing Astin's I-E-O model in the study of student retention: A multivariate time dependent approach. Paper presented at the *36th Annual of the Association for Institutional Research*, Albuquerque, NM. http://eric.ed.gov/?id=ED397732.

Mahapatra, S., and Khan, M. 2007. A framework for analysing quality in education settings. *European Journal of Engineering Education* 32 (2): 205–217.

Marshall, S.J. 1998. Professional development and quality in higher education institutions of the 21st century. *Australian Journal of Education* 42 (3): 321–334.

Mazur, G. H. 1993. QFD for service industries, from voice of customer to task deployment. Paper presented at the *Proceedings of the Fifth Symposium on Quality Function Deployment, QFD Institute*, Ann Arbor, Morehead.

Mazur, G. H. 1996. Doubling sales with quality function deployment. Paper presented at the *Proceedings of the 5th Annual Service Quality Conference*, Las Vegas.

Motwani, J., Kumar, A., and Mohamed, Z. 1996. Implementing QFD for improving quality in education: An example. *Journal of Professional Services Marketing* 14 (2): 149–159.

Mukaddes, A. M. M., Bagum, N., Islam, M. A., Bashar, M., and Chakrabarty, V. 2010. Translating the Student's voice into teaching techniques: A quality function deployment approach. Paper presented at the *2010 International Conference on Industrial Engineering and Operations Management*, Dhaka, Bangladesh.

Mukaddes, A.M.M., N. Bagum, N., Islam, M. A., and Khan, M. M. A. 2012. The application of quality function deployment to improve the teaching techniques in higher education. *International Journal Industrial and Systems Engineering* 11 (1/2): 97–109.

Murgatroyd, S. J., and Morgan, C. 1993. *Total quality management and the school*. Buckingham: Open University Press.

Padró, F. F., and Kek, Y. C. M. A. 2013. Student engagement and student satisfaction: Two measures arguing for independent review criteria of standards for student support services in national quality assurance schemes. Paper presented at the *INQAAHE Bi-Annual Conference*, Taipei, Taiwan.

Parasuraman, A., Zeithaml, V. A., and Berry, L. L. 1985. A conceptual model of service quality and its implications for future research. *The Journal of Marketing* 49 (4): 41–50.

Pascarella, E.T., and Terenzini, P. T. 2005. *How college affects students: A third decade of research*. Vol. 2. San Francisco: Jossey-Bass.

Pascarella, E. T., Terenzini, P. T., and Feldman, K. A. 2005. *How college affects students*. Vol. 2. San Francisco, CA: Jossey-Bass.

Pitman, G., Motwani, J., Kumar, A., and Hung Cheng, C. 1996. QFD application in an educational setting: A pilot field study. *International Journal of Quality & Reliability Management* 13 (4): 99–108.

Prabhushankar, G., Shankar, B. L., and Veena, T. 2015. Curriculum redesign in higher education using QFD: A case study. Paper presented at the *Proceedings of the International Conference on Transformations in Engineering Education,* New Delhi.

Qureshi, M.I., Khan, K., Bhatti, M. N., Khan, A., and Zaman, K. 2012. Quality function deployment in higher education institutes of Pakistan. *Middle-East Journal of Scientific Research* 12 (8): 1111–1118.

Raharjo, H., Xie, M., Goh, T. N., and Brombacher, A. C. 2007. A methodology to improve higher education quality using the quality function deployment and analytic hierarchy process. *Total Quality Management* 18 (10): 1097–1115.

Ringer, A., Volkov, M., and Bridson, K. 2010. International students' perceptions of the Australian tertiary learning environment. Paper presented at the *Australian and New Zealand Marketing Academy Conference ANZMAC 2010,* Christchurch, New Zealand.

Robertson, M., Line, M., Jones, S., and Thomas, S. 2000. International students, learning environments and perceptions: A case study using the Delphi technique. *Higher Education Research & Development* 19 (1): 89–102.

Russel, R. S., and Taylor, B. W. 2003. *Operations management.* 4th ed. Upper Saddle River, NJ: Pearson Prentice-Hall.

Sahney, S., Banwet, D., and Karunes. S. 2004a. A SERVQUAL and QFD approach to total quality education: A student perspective. *International Journal of Productivity and Performance Management* 53 (2): 143–166.

Sahney, S., Banwet, D., and Karunes, S. 2006. An integrated framework for quality in education: Application of quality function deployment, interpretive structural modelling and path analysis. *Total Quality Management & Business Excellence* 17 (2): 265–285.

Sahney, S., Banwet, D. K., and Karunes, S. 2004b. Conceptualizing total quality management in higher education. *The TQM Magazine* 16 (2): 145–159.

Scrabec, Q. 2000. Viewpoint: A quality education is not customer driven. *Journal of Education for Business* 75 (5): 298–300.

Shah, M., Nair, C. S., and Bennet, L. 2013. Factors influencing student choice to study at private higher education institutions. *Quality Assurance in Education* 21 (4): 402–416.

Shaw, D. L. 2009. *Bridging differences: Saudi Arabian students reflect on their educational experiences and share success strategies.* (Doctor of Philosophy). Oregon State University, Corvallis, OR.

Shekhar, S., and Arora, A. 2012. Customer view analysis of organization and governance in Indian engineering education – A QFD approach. *International Journal of Engineering and Innovative Technology (IJEIT)* 2 (5): 141–150.

Shen, X., Tan, K., and Xie, M. 2000. Benchmarking in QFD for quality improvement. *Benchmarking: An International Journal* 7 (4): 282–291.

Silverman, S.L., and Casazza, M. E. 2000. *Learning & development: Making connections to enhance teaching. Higher and Adult Education Series*. San Francisco: Jossey-Bass.

Singal, R. 2012. Students perspective of TQM in professional education institutions in Hisar city. *International Journal on Arts, Management and Humanities* 1 (1): 45–57.

Singh, V., Grover, S., and Kumar, A. 2008. Evaluation of quality in an educational institute: A quality function deployment approach. *Educational Research and Review* 3 (4): 162–168.

Slethaug, G., and Manjula, J. 2012. The business of education: Improving international student experiences in Malaysia. *World Journal of Social Sciences* 2 (6): 179–199.

Son, J.-B., and Park, S-S. 2014. Academic experiences of international PhD students in Australian higher education: From an EAP program to a PhD program. *International Journal of Pedagogies and Learning* 9 (1): 26–37.

Svensson, G., and Wood, G. 2007. Are university students really customers? When illusion may lead to delusion for all! *International Journal of Educational Management* 21 (1): 17–28.

Tague, N.R. 2005. *The quality toolbox*. 2nd ed. Milwaukee, WI: ASQ Press.

Tajfel, H., and Turner, J. C. 1979. In *An integrative theory of intergroup conflict*, ed. Austin, G., and Worchel, S., Monterey, CA: Brooks/Cole.

Tajfel, H., and Turner, J. C. 1986. *The social identity theory of intergroup behavior*. Chicago, IL: Nelson-Hall.

Talib, N., and Maguad, B. A. 2011. Academic management and implementation of the QFD approach. Paper presented at the *ASBBS 18th Annual Conference*, Las Vegas.

Terkla, G. D., Roscoe, H. S., and Etish-Andrews, J. 2005. Voices from around the world: International undergraduate student experiences. Paper presented at the *5th Annual Association for Institutional Research Forum*, San Diego, CA.

Terraschke, A., and Wahid, R. 2011. The impact of EAP study on the academic experiences of international postgraduate students in Australia. *Journal of English for Academic Purposes* 10 (3): 173–182.

Tsinidou, M., Gerogiannis, V., and Fitsilis, P. 2010. Evaluation of the factors that determine quality in higher education: An empirical study. *Quality Assurance in Education* 18 (3): 227–244.

Vinayak, K., and Kodali, R. 2013. Benchmarking the quality function deployment models. *Benchmarking: An International Journal* 20 (6): 825–854.

Watjatrakul, B. 2014. Factors affecting students' intentions to study at universities adopting the "student-as-customer" concept. *International Journal of Educational Management* 28 (6): 676–693.

Yeh, T.-M., and Chen, S.-H. 2014. Integrating refined Kano model, quality function deployment, and grey relational analysis to improve service quality of nursing homes. *Human Factors and Ergonomics in Manufacturing & Service Industries* 24 (2): 172–191. https://doi.org/10.1002/hfm.20358.

Zairi, M., and Youssef, M. A. 1995. Quality function deployment: A main pillar for successful total quality management and product development. *International Journal of Quality & Reliability Management* 12 (6): 9–23.

Zeine, R., C.A. Boglarsky, P. Blessinger, and Michel, L. 2014. External adaptability of higher education institutions: The use of diagnostic interventions to improve agility. *Change Management: An International Journal* 13 (4): 1–11.

Part IV

Managing Doctoral Programs

Training of Research Supervisors: Communities of Practice, Distance Supervision, and Holistic Strategies

18

Ronel Erwee

Contents

Abstract

This chapter explores the evolution of supervisory training and contrasting approaches that universities engage in during the training of supervisors. It deals with the use of technology and supervisory communication with offshore or distance doctoral students, but also whether cultural differences between supervisors and students could affect their relationship. It notes examples of the development of an online research supervision toolkit as well as incorporating communities of practice. It presents a case study of a holistic view of supervisory training within a university research training framework. Recommendations for managing current challenges and future needs for research supervisory training are discussed.

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Keywords
Research supervisors · Research supervisory training · Communities of practice for research supervisor · Doctoral supervision · Supervision at a distance · Online research supervision toolkit · Holistic research planning in universities

Introduction

Evolution of Training of Supervisors to Guide Their Doctoral Candidates

There is a projected shortage of Australian academics due to an aging workforce, declines in job satisfaction, and pressures and incentives to increase enrollment of students. Australia has been recruiting academics internationally (Hugo and Morris 2010) and could expand this workforce in the future by increasing numbers of doctoral graduates. Many academics, even those who have been successful supervisors of doctoral students in traditional programs, will require support in developing the range of skills appropriate to supervising doctoral students at a distance and to minimize attrition of doctoral students (Albion and Erwee 2011). Luca and Wolski (2013, p. 17) in their report on a Good Practice Framework for research training in Australia argue that a university should provide higher degree research students with a supervisory team with adequate discipline and research method expertise who are also successful in supervising research students to completion (see also Stephens 2014).

Australian universities attract a large percentage of international doctoral candidates, and many of these candidates relocate to Australia for the duration of their candidature and have to face the challenges of settling temporarily in a foreign country and working closely with a supervisor from a different cultural background (Malan et al. 2012). Whitely (2004) in one early debate about challenges in doctoral supervision, pointed out that many supervisors in Australian universities at that time were trained and supervised within Western perceptions of doctoral research, value systems, and practices. Therefore when they supervised international or offshore students in diverse cultures, they were expected to understand their own value systems to enable their DBA candidates of different cultures to share knowledge of acceptable practices that are relevant to the supervision context. Supervisors should be self-aware but also guide doctoral students on the implications of cross-cultural differences when using measuring instruments for research or during data collection and data analysis. In contrast to Australian universities which are dealing with an aging academic workforce and insufficient new qualified academics to replace retiring academics (Hugo and Morris 2010), universities in developing countries are facing pressures of either too few academics with doctoral degrees or insufficient doctoral candidates or many newly qualified academics with little experience in supervision who are facing demands to accept doctoral students (Nkomo 2015).

This chapter will discuss the lessons learnt from research about supervision in a number of Australian universities to reach conclusions about (a) acknowledging the

experience of supervisors, (b) broadening the spectrum of available supervisory training and workshops, (c) enabling supervision at a distance by using technology in supervision, (d) acknowledging cultural differences in supervisory-doctoral student relationships, and (e) using resources such as an online Research Supervision Toolkit. A case study will be presented of one university developing a holistic approach to training supervisors within a redesigned research context.

Acknowledging the Experience of Supervisors

One study explored the link between the supervisor's age, experience, and higher degree completions achieved. In an Australian university (Van Rensburg et al. 2015), the majority of the sample was older than 50 years of age. In addition 43% indicate that they have been supervising for over 7 years, but 42% of all the supervisors had achieved only one to three HRD completions with a relatively smaller cohort of 24% achieving more than seven HRD completions. A South African sample of supervisors (Van Rensburg et al. 2015) was all relatively younger, and many had not had much supervisory experience nor achieved any higher degree completions. An interpretation could be that there was a difference among these diverse cohorts of supervisors in terms of their continuum of experience and guiding their higher degree students to successful completion. The **continuum of supervisory experience** ranges from supervisors with minimal experience to supervisors with growing experience with at least three HRD completions to experienced supervisors with ten or more HRD completions.

In terms of supervisory experience, Blass et al. (2013) found that their sample was skewed toward older supervisors, with about 60% being 50 years of age or older and 40% who supervised for more than 7 years. They note that this is not surprising, given the aging profile of the academic workforce and the requirement for doctoral supervisors to have a PhD. Furthermore in new and emerging areas, it is not uncommon for academics to begin their career as a professional, then work as an academic in their 30s and 40s, and qualify with a PhD later in their careers.

Experience and adapting their supervisory style: McCarthy (2004, p. 23) identified key challenges in doctoral supervision as completions, candidate autonomy, and quality of thinking to argue that a coaching approach lends itself to the support of the doctoral candidate in successful completion of their thesis. Using coaching as an approach in doctoral supervision implies that the supervisor could encourage their candidates to focus on goals, develop the candidate's autonomy, and challenge the candidate's thinking in a positive way. McCarthy (2004, p. 23) recommended that universities investigate the extent to which coaching skills are already used by supervisors, as well as launch "an evaluation of the effectiveness of coaching in doctoral supervision on completion rates, autonomy and quality of thesis, and on supervisors' and candidates' experience."

Although early career academics (ECRs) described their initial supervisory experiences as variable, personalized, and emotional (Turner 2015), they also acknowledged that as ECRs, they faced many challenges, for example, unrealized

expectations as supervisors. With reference to doctoral students being trained as supervisors, Stephens (2014) noted that this type of respondents seeks guidance from textbooks, workshops, peers, colleagues, and their doctoral supervisor on how to develop as a supervisor. Their supervision style emerges as a reaction to both positive and negative experiences of supervision, and if there is something missing in the supervision experience, the doctoral student or ECR will emphasize this element in their approach to supervision.

In a similar vein, Guerin et al. (2015) found that in another Australian university, supervisors employed a broad range of supervisory approaches informed by their own past experiences of being supervised. Benmore (2014) noted that not only years of supervisory experience should be taken into account but the ability of supervisors to **adapt their supervisory style** to the changing needs of the doctoral candidate. She emphasized that supervisors need to negotiate a range of boundaries, for example, cognitive, emotional relational boundaries in the doctoral learning journey. In addition, supervisors can investigate the different models of how their supervisory styles need to change to anticipate their doctoral candidate's progress over time (see Lee 2008).

Many supervisors tend to start with a functional approach to supervision in the beginning of the dissertation process and adapt their supervisory style to building professional relationships by the end of the dissertation process. In this sense, the supervisors are adhering to an appropriate typology of supervision, but are also exploring other options by leading students from dependence to independence or interdependence (Barnard-Brak et al. 2010; Jasman 2012; Lee 2008; Van Rensburg and Danaher 2009). Boehe (2016) advocates that a **contingency framework for supervisory styles** can assist supervisors in identifying appropriate supervisory styles under varying circumstances. He argues that a range of supervisory styles can be evolved based on functional relationships between organizational, relationship, and research task variables on the one hand and the supervision process and product dimensions on the other hand which can be incorporated into a contingency framework.

Conclusion: These potential trends imply that universities need to take into account the diversity of experience of their research supervisors as well as make them aware of the need to adapt their supervisory style and calibrate their training workshops for supervisors accordingly. One of the recommendations from these studies was that more training and workshops can be designed to assist supervisors to develop **flexible approaches** to supervision and mentoring. Furthermore, supervisory training should more clearly incorporate guidance to supervisors on the amount of self-regulation in their students and that supervisors could use to suit the learning needs of their doctoral students during various phases of the program.

Contrasting Approaches of Universities to Supervisory Training

Reports in Australia make recommendations with regard to supervisory development and support from various sources at various points in their development along

the supervisory trajectory (see, for example, Hammond et al. 2010; Van Rensburg and Danaher 2009). However, in practice, mentoring schemes and workshops are provided in-house by many universities and have all been operating and developing from an ad hoc to a more systematic approach, but there has been very little comparison for benchmarking.

For example, the majority of doctoral students in two faculties in an Australian university were studying while working in locations as diverse as Australasia, Middle East, Asia Pacific, and Canada, Africa, Germany or Switzerland, and the USA (see Malan et al. 2012). In this Australian university, a 2010 working party of the Graduate Research Committee, the "USQ Advisory Group on Supervision Best Practice," discussed the design and development of dissertation workshops for supervisors (Erwee and Albion 2011). There was also a discussion whether the workshops should be packaged as modules within a supervision stream to count toward a course in the Graduate Certificate in Tertiary Teaching and Learning; however, this proposal was not accepted. At that time, the pro-vice-chancellor (research) and the Graduate Research Committee decided that (a) the workshops should form part of the development and registration of supervisors, (b) there should be three mandatory workshops and three recommended workshops, and (c) supervisors complete the workshops as a professional development activity through the human resources system so that attendance is recognized for supervision accreditation. Three mandatory workshops about (a) policies and procedures for higher degrees, (b) thesis writing, and (c) building relationships with doctoral students were successfully organized in 2010 and 2011. During these years, getting supervisors, especially "experienced" supervisors, to refresh their training proved to be more difficult. Since those times, a significant number of policies and procedures about confirmation, ethical clearance, and examination have evolved that both supervisors and their doctoral students need to follow and which are now included in supervisory training.

Blass et al. (2013), in their audit of current practices of five Australian universities, found that the partner institutions (Swinburne, ECU, USQ, CQU, Victoria) already had in place a **variety of initiatives for supervisor development**. The audit highlighted the range of initiatives offered and noted the impact of the university context on the perceptions and uptake of the initiatives. The general trends (see Table 1) were that the universities registered their supervisors on different levels and expected to have a doctorate and to attend compliance training during the year. Most universities offered a wide diversity of professional development programs or workshops on university or faculty level which were related to specific needs of supervisors. Furthermore, most of the institutions were using online resources, for example, generated by the fIRST project, but supervisors requested more specific online resources. Two universities had already designed and effectively implemented a community of practice for research supervisors.

One of the conclusions of the Blass et al. (2013) study is that mentoring schemes and short courses/workshops for supervisors provided in-house by their universities have all been operating and developing **from an ad hoc to a more systematic approach**, but again there has been no formal evaluation or comparison for benchmarking and best

Table 1 Comparative analysis of the spectrum of supervisory training in five Australian universities

Activities	Institution 1	Institution 2	Institution 3	Institution 4	Institution 5
Register of supervisors	Yes, potential, supervisor induction course	Yes, conditions' recompletions, research active, training	Yes, registration required and monitored by DVC research; ADR in faculty coordinator in schools	Yes, registration required, office for postgraduate research monitors and offers course, supervisor induction	Yes, registering supervisors
Supervisor's PhD and experience	PhD; first an associate supervisor	PhD; first an associate supervisor or co-supervisor	PhD; first an associate supervisor or co-supervisor	See previous; 2 day intensive, "demystifying thesis supervision"	Levels of experience and training
Mandatory compliance course for supervisors	No	Compliance training; full semester unit on research training and supervision	Mandatory compliance training; recognition in HR system	Mandatory minimum 2 h training per annum; elective unit on research supervision in a grad cert	Basic compliance training
Faculty-based training events	Short workshops	Faculty-based training events	Six per annum as part of the CoP; e.g., dealing with examiner's reports, sharing practice	Yes, relevant to supervisors' needs, e.g., supervisor-student relationships	Available and ad hoc
School-based training events	Lunchtime workshops	School-based training events	Faculty-based training events	No	No
Community of practice	No	Yes "supervisor conversation sessions"	Training needs analysis; designed a community of practice; at least six sessions pa	No	Yes, but not well known
Conference for supervisors	Yes	No	Annual research day, special sessions for supervisors	No, but numerous professional development sessions	No
Online resources	Yes, fIRST	N.A.	fIRST; forms for progress reports, ethic clearance, confirmation panel, all examination; statistical support		Yes, but take-up is sporadic

(*continued*)

Table 1 (continued)

Activities	Institution 1	Institution 2	Institution 3	Institution 4	Institution 5
Integrated university research plan	No	No	All of the above are part of a holistic approach to research training	Evolving	No

Based on Blass et al. (2013)

practice. It is noted that each university is working in isolation, with some discussion at national forums, but no substantive evaluative data has been provided on the fitness for purpose of the various offerings at the various institutions. The responses of 287 supervisors in 5 Australian universities (Blass et al. 2013) indicate that the institutions differ in terms of the spectrum of supervisory training. For example, in one institution, not many supervisors have attended training but read books on supervisory practice (see Table 1). In a second institution, less than 20% believe that the limited professional development programs are adequate for their needs. Over 80% of supervisors in the third university have attended mandatory supervisory training or optional workshops on supervision practice, whereas almost three-quarters of respondents have attended mandatory supervision training or optional workshops at the fourth university. In the fifth university, the small sample indicates that they attended mandatory training, but no optional workshops (see Table 1).

Luca and Wolski (2013, pp. 17–18) recommend that, in terms of supervisor training, supervisors should participate regularly with a **broad range of supervisor development programs** at least once every 2 years; there should be supervisor induction programs that introduce newly appointed academic staff with supervisor responsibilities applicable to the specific university, and the experienced supervisors should actively mentor early career researchers involved in supervisory teams in supervision and examination practices. In terms of the university's quality assurance for such supervisory training, this would imply that faculty should monitor the participants attending supervisor induction, the proportion of supervisors attending supervisor professional development in the previous 2 years, and gather feedback on supervisor development programs (Luca and Wolski 2013, p. 18).

Wallace et al. (2015) investigated how 18 Australian universities manage their DBA program. As part of their research, they noted that supervisory training is important to manage the DBA program's practical emphasis as well as meeting the academic quality standards of the Australian Quality Framework. They recommend that the registration of supervisors, their training and management, as well as their capacity to supervise should be investigated in a wider sample of universities.

An emerging trend is that universities differ in the spectrum of training that they currently offer. Some universities still offer minimal training, for example, only on the university policies and procedures applicable to the selection, admission, management, and examination of doctoral students. Other universities have designed additional mandatory training about writing the dissertation and managing relationships with doctoral students; see Fig. 1.

Fig. 1 Continuum of research supervisory training in universities (Adapted from Van Rensburg et al. 2015)

Perceptions of training and levels of satisfaction: As noted above in Table 1, differences emerged between the five universities as to their approaches to training of supervisors (Blass et al. 2013). Although many of the respondents in the five universities did find supervisory training in their institutions effective to some degree, a third did not rate the mandatory training provided by their institutions for supervisors as being effective. Furthermore almost a third of the respondents in the five universities rated their training as supervisors as "poor" or barely adequate. The busy schedules of supervisors, with varying commitments to classroom teaching, administration, research, and research supervision, meant that they could not always attend face-to-face training, and in any case, there were limitations in the timeliness and relevance of training provided by institutions relative to these needs.

In previous research on types of research supervisors' training and supervisors' perceptions of the effectiveness of supervisory training, there seem to be cross-country differences in approaches. In the Van Rensburg et al. (2015) study, both experienced supervisors and inexperienced supervisors tend not to be satisfied with the type or level of training that they receive. There also seems to be a continuum of perceptions about the **adequacy of training,** namely, (a) dissatisfaction with training from both ECRs and experienced supervisors to (b) training is adequate as it meets basic needs of supervisors to (c) training should be more calibrated to the needs of supervisors, and there should be more online tools for supervisors.

Conclusion: There seems to be more universities which aim to move beyond basic supervisory training and to offer a wider range of developmental activities such as communities of practice as well as voluntary workshops presented by experienced supervisors on issues such as examination, preparing, and presenting papers with doctoral students. Universities should benchmark their supervisory training against their peers' offers and strive for a more integrated approach calibrated to the different levels of supervisory needs. There is also an emerging trend that supervisory training is part of a holistic approach to research development and a university's strategic research planning.

Example 1: Community of Practice for Research Supervisors

A University of Southern Queensland (USQ) Learning and Teaching Associate Fellowship was awarded to enhance the learning journey of postgraduate research

students by improving the capability of research supervisors at USQ (Cater-Steel 2009). The project conducted a training needs analysis to determine the training requirements of supervisors, instituted a community of practice for research supervisors (CoP-RS), and took steps to design a professional development program with pilot workshops. The initial pilot project in 2009 triggered interest, and the diversity of workshops had been well supported (about 15 participants per session in 2011). Table 2 provides examples of themes such as registration of supervisors, approaches to examiners' reports, or insights into own supervisory styles.

After 2012 members had become more active, initiated more of the themes, and did more presentations to share their practice. Since 2012 the participation has increased from 25 to 30 supervisors per session. There was greater awareness and networking among supervisors beyond their discipline and faculty confines. The CoP attracted ongoing funding for an ad hoc project officer as well as a refreshment supplement from the director research training. Online resources for CoPs have

Table 2 USQ community of practice: initial themes in 2009–2012

Sharing practice themes	Building domain knowledge themes
2009 Launch of the CoP (February) Discussion regarding external RHD students –April. The challenges of supervision and suggestions to overcome problems (Erwee & Albion)	2009 Training for RHD supervisors. What training is required and what training is available?
2010 What do examiners expect: examples of examination criteria (including R Erwee) Semester 2 training for supervisors – what courses are required, and who will conduct them. Planning future CoP-RS meetings for 2010	2010 Registration of supervisors at USQ – *best attended workshop to date* What is an appropriate structure for PhD program and supervision model for candidate success?
2011 Insights into the supervision journey; planning future CoP-RS meetings for 2011 (March) Panel of USQ staff members who are recent PhD graduates share their PhD journey experiences (April) Panel of three USQ staff members who are experienced supervisors share their advice on selecting examiners and examining theses (May) ORHD – scholarship process (July) "Report on grant 'Developing a toolkit and framework to support new postgraduate research supervisors in emerging research areas' (August)" Anne Jasman & R Erwee	2011 R&HD progress reports; communicating with external doctoral students; ALTC project report (R Erwee) Academic literacy – what does it mean in the context of research and higher degree candidates? Thesis examination process Challenges with supervision Future vision – research training (supervisor accreditation); grants discussion
2012 Revision of the guidelines for supervision – deregistration of supervisors (June) R Erwee	2012 Discussion of guidelines for supervisors (Albion)

increased and are available online at http://www.usq.edu.au/research/support-development/research-training/resources. In addition, a New Zealand study (Spiller et al. 2013) highlighted the addition and building of a community of postgraduate supervisors to enhance their ability in reflective conversations and develop capacity to understand the complexities of and dynamism of the supervisory process.

Conclusion: Generic workshops on the registration procedures for supervisors, selecting examiners, using criteria for evaluating dissertations, and new ethics procedures elicit the most interest and seem to be incorporated in most universities' supervisory training offers. However, **critical and reflective communities of practice** for research supervisors seems to be an emerging trend.

Cultural Clusters and Supervision

Malan et al. (2012) suggested that candidates from the Confucian Asia, Middle East, and South Asian clusters have different national cultural values and religions, each with diverse guidelines about lifestyles, moralities, ethics, and religious laws from those of candidates from the Anglo and sub-Saharan clusters. Although religion did not appear to have a direct influence on the supervisory relationship, it has an impact on the socialization of the doctoral candidates. However, Malan et al. (2012) noted international student perceptions about the *differences* between the rural/traditional cultures in which many of them experienced as children and the urban/modern cultures which they experienced as undergraduate, graduate, and doctoral students in general. Perceptions of students from country clusters in the Middle East, South Asia, Confucian Asia, and sub-Sahara (Chokkar et al. 2007) of the *rural/traditional* inhabitants of their countries are in contrast to their views about the cultural dimensions of modern people living in metropolitan areas. An explanation is that the doctoral students migrated from rural to urban environments, and their societies experienced high levels of urbanization which could have impacted also on cultural values. When they enrolled for doctoral programs, they were accustomed to the university culture even if it differed from their national cultural values. This appears to alleviate the impact of cultural diversity on the supervisory relationship. Malan et al. (2012) further suggest that cultural diversity affects the *social environment* of individuals and may have a secondary effect on doctoral candidates' progress and successful completion, thereby highlighting the potential significance of cultural misunderstandings in the supervisory relationship.

Winchester-Seeto et al. (2014) identified eight intensifiers that make doctoral supervision in a cross-cultural context more complicated or difficult for international candidates: *language*, *cultural differences in dealing with hierarchy*, *separation from the familiar*, *separation from support*, *other cultural differences*, *stereotypes*, *time*, and *what happens when the candidate returns home*. Half of their respondents (supervisors and doctoral candidates) note that *separation from the familiar* and *language* made the *doctoral supervision journey more complicated.* Using Winchester-Seeto et al.'s (2014) conceptual framework as intensifiers for self-examination may help universities to better understand the real issues, to target

resources, to mitigate distress of international candidates, and to reduce pressure on supervisors.

Conclusion: Supervisors could explore support of students from diverse cultures and be sensitive about appropriate communication. The university may encourage self-help groups among doctoral students from diverse cultures. Likewise Student Services could ensure that supervisors and other staff appreciate potential emotional and psychological problems related to cultural diversity. Some universities may have developed strategies to involve the families of foreign candidates in interventions to create a better understanding of the cultural values and expectations of the Australian culture.

Strategies for Supervision at a Distance and Communication Tools

Whitely (2004) argued that supervision is probably the most difficult of all areas to manage in an offshore setting. The fundamental problems were a lack of face-to-face communication, and for various reasons (not constantly being motivated by interactive sessions, less frequent contact, etc.) completion rates were both lower, and the time taken was greater, with offshore programs. All staff involved in the DBA program in Curtin University traveled to Hong Kong on a semi-regular basis and could therefore meet with their DBA students (Whitely 2004). At that stage, it was argued that most universities will not be able to replicate that aspect of the Curtin model. The university decided to allow for some regular contact with Thai doctoral students, and a smaller team was involved so that these supervisors got some face-to-face contact with students. Another recommendation to offshore students was to take some holidays and travel to Western Australia for intensive research and regular contact with their supervisor.

Experienced supervisors in Australia were sensitive to issues and circumstances that may affect communication, especially with international doctoral students studying at a distance (Erwee et al. 2011). Such doctoral students have different personal and employment circumstances that affect availability of time and technology that may be needed for communication. These supervisors, especially those in two faculties with higher proportions of international doctoral students, displayed unique insights about their underlying value systems in approaching challenging students and situations. Previous research demonstrated some of the potential in online communities for doctoral studies (Albion 2006), but further work will be required to extend the benefits of such efforts in time and breadth of coverage. Investigation into the **communication needs of external doctoral students** (Erwee et al. 2013) indicated that they viewed e-learning as an appropriate mechanism for training in research skills, but they were not interested at that stage in social forums or supervisors using general networking to contact them.

Example 2: Use of Technology

In 2004 Curtin University experimented with technology, namely, real-time audio and video links via broadbrand (Whitely 2004). Student and supervisor used basic

webcam enabling each party to see the others' facial expressions and other motions, as well as share screens to talk about the changes that needed to be made to chapters. At that stage, that technology was not rolled out properly for doctoral programs or meetings between supervisors and students on a fortnightly or even monthly basis.

A decade later, Albion and Erwee (2011) noted that several supervisors expressed a strong desire for face-to-face interaction with students at critical stages in the doctoral journey. These supervisors, used to frequent changes in learning management systems, found the available technologies at that time (mostly e-mail and telephone), limiting for development of relationships and for certain kinds of work. Few supervisors had much experience of working with newer technologies that might address the issues through offering a stronger sense of presence, but there was willingness to consider such alternatives. However, White and Coetzee (2014) argued that in a distance context where research students cannot attend on campus workshops, e-mail-supported supervision should be considered as an alternative to traditional one-on-one supervision.

Maor et al. (2015) investigated whether web-based tools could influence the training of doctoral students, be effective in supporting research students, but also the extent to which such tools could reduce potential "breakdowns" in supervisory relationships. Their meta-analyses not only indicated **Web 2.0 tools** facilitated a positive dialogue between supervisor and student but also that **combinations of technology and appropriate pedagogy** assisted supervisors to espouse a more participatory supervision approach. During this period, Nasiri and Mafakheri (2015, p. 1968) found that the main challenges with distance supervision were spatial and temporal distance between the doctoral student and supervisor or host university. They advised that supervisors should implement "more time-efficient interaction strategies such as virtual office hours, peer live meetings, a stricter schedule of submissions and feedback, and mandatory induction sessions." Since 2015 the use of Skype and Zoom to have individual or group discussion sessions with doctoral students has become a common practice in the University of Southern Queensland.

Conclusion: Professional development for supervisors should include opportunities to explore relevant technologies through hands-on training with opportunities to practice in a supportive environment. Both early career and experienced researchers would welcome and could use more online tools for supervisors.

Example 3: Research Supervision Toolkit (Online)

The author was a chief investigator for one of five universities receiving an OLT grant to develop a "toolkit" and "framework" to support research supervisors (Blass et al. 2013). This research supervision toolkit was initially aimed at ECR supervisors in emerging fields, but it was realized that experienced supervisors could also use specific tools to compare their practices during workshops.

When these supervisors reflected on their own experience as doctoral students in the past, more than 40% did not rate their supervisory team highly (Blass et al. 2013). This lack of good practice experience from their own PhD may have colored the respondents' perceived need for training and support. The majority of supervisors

who were interviewed felt there was a need for further resources to support them in their supervisory practice and felt that current offerings (workshops, books, and in some cases, communities of practice and mentoring) were not meeting all their needs in this regard. Supervisors were particularly looking for real-time, readily available resources and advice that could be accessed as and when needed from their offices or home computers.

The request to make tools for supervisors available online became a focus during the research for this OLT project. Online tools enable a supervisor to access specific research supervision tools when a particular need arises (e.g., difficult relationship problem) and also to access it at a time convenient to the supervisor. These tools follow a **life cycle of supervision of a thesis** (see Fig. 2) and start with guidelines on the selection of students. As supervisors have access to discipline sources or numerous books with guidelines on structuring a thesis and doing research or university guidelines on achieving confirmation and finalizing the thesis, most supervisors requested tools on relationship management, managing progress, and

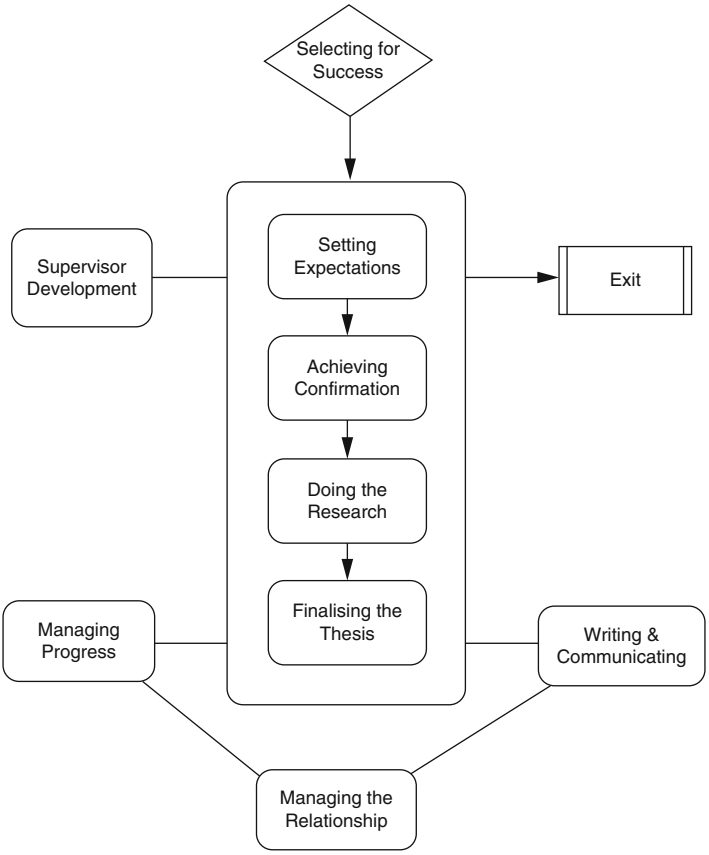

Fig. 2 Research supervision toolkit – see http://researchsupervisiontoolkit.com/

further supervisory development. Therefore many of the tools included guidelines on dealing with difficult students, dealing with abnormal behavior, and managing marginal progress, emotional management, as well as case studies for discussion in groups during CoPs (see Fig. 2 below).

Conclusion: The general trend was that most supervisors know how to guide students in all the basic skills such as writing dissertations. However, based on demand from supervisors, most of the tools in the Research Supervision Toolkit deal with relationship issues.

Case Study: A Holistic Approach to Researcher Development and Training – "ReDTrain Initiatives"

One of the conclusions of a previous study about the connected needs of doctoral students (Erwee et al. 2013, p. 327) was that interventions may be developed to offer external doctoral students a more complete learning experience through enhancing the teaching and supervision strategies of supervisors. Since 2015, the USQ Director (Research Training and Development) has leveraged from the government-funded collaborative research network (CRN) program of work – http://www.usq.edu.au/research/research-at-usq/institutes-centres/adfi/digital-crn – and developed a **holistic approach to research and researcher training** which has significantly affected supervisory, as well as doctoral student training. For example, the "ReDTrain" initiatives were launched under the Division of Research & Innovation (R&I), as part of this holistic approach to provide a structured framework and support USQ researchers, as identified in the university's strategic plan (see http://www.usq.edu.au/research/support-development/research-training/initiatives).

Various sections within the Research & Innovation Division are encouraged to design and coordinate workshops as needed, to improve researcher's knowledge of ethics, financial management of research projects, intellectual property (IP) processes and procedures, grant writing, and research writing that both supervisors and their students can attend. Additionally, the ReDTrain team work with research coordinators and administration across all the disciplines *to provide opportunities for researcher development to enhance engagement and research performance.* For instance, as part of the significant support services to doctoral and other research students, the ReDTrain initiatives also include weekly invitations to doctoral students' presentations to a confirmation panel and research presentations by supervisors, as well as statistical services and NViVo consultations. USQ's Researcher Development Community of Practices (ReDCoPs) – http://www.usq.edu.au/research/support-development/research-training/initiatives/communities-of-practice – invites all researchers and research students to engage and share knowledge. The research supervisors' CoP is different as this is solely for research supervisors to assist them to discuss their domain expertise and sharing their practice (see http://www.usq.edu.au/cops/communities/cop-rs).

ReDTrain activities which affect supervisors further include:

(a) a Researcher Mentoring (ReM) Program that connects early and mid-career researchers with leaders in their field of research.
(b) Publication Excellence Awards and a Q1 challenge to encourage high-quality research publications as USQ seeks to reward the publication of high impact books and journals via these awards.
(c) Research Giants' Visiting Scholar Program which provides funding to host world-renowned research leaders to stimulate research and innovation at USQ. The Research Giants and Eminent Visitor Scholar Scheme (EViSS) often include personal discussions or workshops for USQ supervisors by the visiting scholars.
(d) Find Your Research Topic – http://www.usq.edu.au/research/research-students/research-topic – published in Q2, 2016, which provides a portal to easily access *areas of interest with world-class research opportunities at USQ*. The current resources' website for research supervisors is being redesigned – the Research Supervision Portal is expected to be published in Q3, 2016, additionally.

Recommendations to Universities for Supervisory Training

If the Good Practice Framework in the Higher Degree Research Training Excellence research (Luca and Wolski 2013, p. 18) is applied by universities, it implies that the universities need to take into account the **diversity of experience** of their research supervisors as well as **calibrate** their training workshops for supervisors accordingly. The latter implies a training needs analysis and opportunities for feedback on current training offerings. Another related recommendation is that more training and workshops can be designed to assist supervisors to make them aware of the need to adapt their supervisory style and develop **flexible approaches** to supervision.

In general universities offer **mandatory training** on compliance issues, such as administrative rules and policies regarding confirmation of candidature, ethical clearance and workshops on the registration procedures for supervisors, selecting examiners, and using criteria for evaluating dissertations. More innovative workshops have emerged which offer a broad range of research supervisor development programs. An aspect which needs attention is criteria for the registration of supervisors while the deregistration of supervisors is still a contentious issue. Benchmarking of a university's approach to supervisory training against those of its peers is evolving.

Emerging trends are voluntary workshops presented by **experienced supervisors** on issues such as examining theses or guiding doctoral students on what examiners want and preparing and presenting papers with doctoral students. Blass et al. (2013) note that supervisors are looking for more support in relation to the complex, interactive aspects of the PhD journey, namely, management of the relationship and dealing with nonperforming or emotionally stressed doctoral students. Experienced supervisors can be offered opportunities to engage in short-term **mentoring contracts** with ECRs.

More universities now offer specific **training for ECRs** such as supervisor induction programs for newly appointed supervisors, assisting the doctoral student

to structure a thesis, and writing journal articles. However, it is important to evaluate whether the generic training or specific developmental activities for ECRs are appropriate to their changing needs.

Communities of practice for research supervisors as developmental activities have evolved strongly over time, and critical and reflective CoPs for supervisors seem to be an emerging trend. Some of the ongoing critical success factors of a CoP are the participation of experienced ECRs to share their experiences, to be accepted in a nonevaluative peer group and to be kept up to date on systemic changes or support provided by the university.

The composition of the populations and doctoral students in AUS (Blass et al. (2013) exhibits **cultural diversity**. This implies that both research supervisors and doctoral students in these institutions could have experienced their training in another country of origin which differs from their current host institution's approaches to supervision. This could imply that research supervisory training should include some discussion or training about the impact of cultural diversity on the supervisory-HRD student relationship (see also Malan et al. 2012). Supervisors could explore support of students from **diverse cultures** and be sensitive about appropriate communication. The university may encourage self-help groups among doctoral students from diverse cultures. Likewise Student Services could ensure that supervisors and other staff appreciate potential emotional and psychological problems related to cultural diversity. Some universities may have developed strategies to involve the families of foreign candidates in interventions to create a better understanding of the cultural values and expectations of the "Australian" culture.

Professional development for supervisors should include more sessions about relevant **technologies**. Learning by doing with opportunity to practice is important and should be backed up with demonstrations that non-experts can follow. Trying new technology locally with colleagues is a useful step and access to a "sandpit" facility in which to try new technologies would be helpful (Albion 2006). Training could include participation by supervisors and HRD students who have used the technology. Both early career and experienced researchers would welcome and could use **more online tools for supervisors**. In addition, more use can be made of online tools for supervisors (such as www.researchsupervisiontoolkit.com) or websites for supervisors within universities which incorporate national and university resources for supervisors. However, based on demand from supervisors, most of the tools in the Research Toolkit deal with relationship issues.

Wallace et al. (2015) discuss **a typology of knowledge modes** that can be used to advance practice in professional doctorates and enhance the socialization of such candidates in universities. They present a conceptual model of the cultural capital that a university and its supervisors have access to and note that the doctoral candidates have access to different types of social capital. Pervan et al. (2016, p. 14) argue that by using this framework, universities can decide to "offer the full suite of knowledge modes given their staff profile or provide training where their capacity is weak or moderate." Furthermore, supervisory training should more clearly incorporate guidance to supervisors on the amount of self-regulation in their students and that supervisors could use to suit the learning needs of their doctoral students during

various phases of the program. Wallace et al. (2015) note the need to question the industry experience of supervisors, what external co-supervision could contribute, and the implications of intercultural issues and cultural nuances between supervisor and doctoral candidate.

Another trend is a greater interest among Australian universities to share ideas and policies on the type of **employability training** that doctoral students would need in the future (Arthur et al. 2008). The generic skills component was envisaged as "skills required for employment in knowledge industries and further career development" (Arthur et al. 2008, p. 5). A university research management issue then becomes how supervisors would be impacted by such training initiatives. A related issue would be to what extent would supervisors be called upon to volunteer to provide such employability training to their doctoral students or how university research centers, supervisors, and Offices of Research and Higher Degrees would collaborate to provide specific types of training, not only for supervisors but also for their doctoral students.

Another issue that emerged during the OLT grant research (Blass et al. 2013) was that **restructuring at universities** affected research training. The Offices of Research Higher Degrees or Research Graduate Students are often restructured resulting in some lag in supervisory training or procedures. Likewise when experienced research supervisors move between institutions, the new institution gains additional insights from an experienced supervisor, whereas the original institution may lose accumulated wisdom. Capturing the knowledge of experienced supervisors on university or national research supervision websites ensures that quality standards can be maintained.

A decade ago, universities were working in isolation with some discussion at research forums or conferences, but very little data was available about the research training for supervisors at the various institutions (see also Luca and Wolski 2013) or contrasting the Australian supervisory training with those in other countries. However, more recently research through the OLT grant system and consultations during the Deans and Directors of Graduate Studies (DDOGS) or similar forums are already acting as a vehicle for cooperation, mutual learning, and support.

Conclusions

Universities understand the importance of supervisor training so that supervisors' skills can be enhanced to handle the variety of doctoral programs and to ensure equity in HDR standards. Universities are evolving strategies to (a) ensure supervisor registration or deregistration, (b) deal with increased expectations of higher loads of supervisions, (c) the use of external co-supervision to assist supervisory teams or whether to appoint retired "emeritus" supervisors, (d) intercultural issues in managing multicultural supervisory teams and doctoral students, and (e) enabling supervisors to maintain quality standards and ethical research requirements.

There is also an emerging trend that supervisory training is part of a **holistic approach** to research development and a university's strategic research planning. Positive national trends are the greater cooperation by universities through

participation in forums (DDOGS) or professional groups (ACIS, ANZAM, ANZMAC) to discuss supervisory and doctoral student training and informally benchmark against their peers.

References

Albion, P.R. 2006. Building momentum in an online doctoral studies community. In *Quality in postgraduate research 2006: Knowledge creation in testing times*, ed. M. Kiley and G. Mullins, 87–96. Adelaide: The Centre for Educational Development and Academic Methods, The Australian National University.

Albion, P., and R. Erwee. 2011. Preparing for doctoral supervision at a distance: Lessons from experience. In *Research highlights in technology and teacher education 2011*, ed. C. Maddux, D. Gibson, B. Dodge, M. Koehler, P. Mishra, and C. Owens, 121–128. Chesapeake: Society for Information Technology and Teacher Education (SITE).

Arthur, E., E. McWilliam, R. Neuman, and C. Nicol. 2008. Framework for best practice in doctoral research education in Australia. Council of Australian Deans and Directors of Graduate Studies, October, pp 1–7.

Barnard-Brak, L., W.Y. Lan, and V.O. Paton. 2010. Profiles in self-regulated learning in the online learning environment. *International Review of Research in Open and Distance Learning* 11 (1): 61–79.

Benmore, A. 2014. Boundary management in doctoral supervision: How supervisors negotiate roles and role transitions throughout the supervisory journey. *Studies in Higher Education* 41 (7): 1251–1264.

Blass, E., S. Bertone, J. Luca, C. Standing, R. Adams, H. Borland, R. Erwee, A. Jasman, K Tickle, and Q. Han. 2013. Developing a toolkit and framework to support new postgraduate research supervisors in emerging areas. *Report to the Office of Teaching and Learning, Department of Industry, Innovation, Science, Research and Tertiary Education*, Sydney. 1–81.

Boehe, D.M. 2016. Supervisory styles: A contingency framework. *Studies in Higher Education* 46 (3): 399–414.

Cater-Steel, A. 2009. Improving capability of research supervisors. *Associate Fellowship LTSU report*, University of Southern Queensland.

Chokkar, J.S., F.C. Brodbeck, and R.J. House. 2007. *Culture and leadership across the world: The Globe book of in-depth studies of 25 societies*. Mahwah: Lawrence Erlbaum Associates.

Erwee, R., and P. Albion. 2011. Preferences of supervisors and external doctoral students for new communication media. *International Journal of Organisational Behaviour* 16 (1): 30–39.

Erwee, R., P. Albion, R. Malan and H. van Rensburg. 2011. Dealing with doctoral students: Tips from the trenches. *Postgraduate supervision: Research and practice conference*, Centre for Higher and Adult Education, University of Stellenbosch, 19 April.

Erwee, R., P. Albion, and L. Van der Laan. 2013. Connectedness needs of doctoral students. In *Outlooks and opportunities in blended and distance learning*, ed. J. Willems, B. Tynan, and R. James. Hershey: IGI Global. Information Science Reference, Chapter 23, 316–329.

Guerin, C., H. Kerr, and I. Green. 2015. Supervision pedagogies: Narratives from the field. *Teaching in Higher Education* 20 (1): 107–118.

Hammond, J., K. Ryland, M. Tennant, and D. Boud. 2010. Building research supervision and training across Australian universities http://www.first.edu.au/public/ALTC/ALTC_building_supervisory_practice.pdf p8.

Hugo, G., and A. Morris. 2010. *Investigating the aging academic workforce: stocktake*. University of Adelaide, Adelaide.

Jasman, A. 2012. From behind closed doors: Making the tacit explicit in research supervision practice. *International Journal of Organisational Behaviour* 17 (1): 28–41.

Lee, A. 2008. How are doctoral students supervised? Concepts of doctoral research supervision. In Facilitating formative feedback: An undervalued dimension of assessing doctoral students' learning. *ATN Assessment conference*, ed. Van Rensburg, H., and P. Danaher, RMIT University, Melbourne.

Luca, J., and T. Wolski. 2013. Higher degree research training excellence: A good practice framework. *Office of Learning and Teaching,* Sydney. www.ddogs.edu.au or learningandteaching@deewr.gov.au.

Malan, R., R. Erwee, H. Van Rensburg, and P. Danaher. 2012. Cultural diversity: Impact of the doctoral candidate-supervisor relationship. *International Journal of Organisational Behaviour* 17 (1): 1–14.

Maor, D., J.D. Ensor, and B.J. Fraser. 2015. Doctoral supervision in virtual spaces: A review of research of web-based tools to develop collaborative supervision. *Higher Education Research and Development* 35 (1): 172–188.

McCarthy, G. 2004. The case for coaching as an approach to addressing challenges in doctoral supervision. *International Journal of Organisational Behaviour* 17 (1): 15–27.

Nasiri, F., and F. Mafakheri. 2015. Postgraduate research supervision at a distance: A review of challenges and strategies. *Studies in Higher Education* 40 (10): 1962–1969.

Nkomo, S. 2015. Challenges for management and business education in a 'developmental' state: The case for South Africa. *The Academy of Management Learning and Education* 14 (2): 242–258.

Pervan, S., D. Blackman, T. Sloan, M. Wallace, A. Vocino, C. Byrne. 2016. Framing the socialisation process of the DBA candidate: what can universities offer and what should candidates bring?. *Studies in Continuing Education* 38: 299–317. https://doi.org/10.1080/0158037X.2015.1120191.

Spiller, D., G. Byrnes, and B. Ferguson. 2013. Enhancing postgraduate supervision through a process of conversational enquiry. *Higher Education Research and Development* 32 (5): 833–845.

Stephens, S. 2014. The supervised as the supervisor. *Education and Training* 56 (6): 537–550.

Turner, G. 2015. Learning to supervise: Four journeys. *Education and Teaching International* 52 (1): 86–98.

Van Rensburg, H., and P. Danaher. 2009. Facilitating formative feedback: An undervalued dimension of assessing doctoral students' learning. *ATN Assessment conference,* RMIT University, Melbourne.

Van Rensburg, H., R. Erwee, and R. Malan. 2015. Research supervisory training: An exploration of trends in supervisory experience, types of training and perceptions of training in Australian and South African cases'. Presented at the Postgraduate supervision: Research and practice conference, Centre for Higher and Adult Education, University of Stellenbosch, 24–26 Mar.

Wallace, M., C. Byrne, S. Pervan, A. Vocino, T. Sloan, and D. Blackman. 2015. A decade of change in Australian DBA landscape. *Education and Training* 57 (1). https://doi.org/10.1108/ET-07-2013-0096.

Whinchester-Seeto, T., J. Homewood, J. Thorgesen, C. Jancenylk-Travewoger, C. Manathunga, A. Reid, and A. Holbrook. 2014. Doctoral supervision in a cross-cultural context: Issues affecting supervisors and candidates. *Higher Education Research and Development* 33 (1): 610–626.

White, T., and E. Coetzee. 2014. Postgraduate supervision: Email as an alternative. *Africa Education Review* 11 (4): 658–673.

Whitely, A.M. 2004. Preparing the supervisor and student for cross-cultural supervision. *International Journal of Organisational Behaviour* 17 (1): 422–430.

Examination of Doctoral Theses: Research About the Process and Proposed Procedures

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Ronel Erwee and Chad Perry

Contents

Abstract

Despite some standard thesis examination guidelines having been established by institutions, examination of theses by individual examiners was known in the 1990s and early 2000s to be an irregular and idiosyncratic process that could delay completion of candidature. This chapter reviews research that established this disappointing position about issues in the examination process and what happened a decade after

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this initial situation. It then proposes some standard procedures to make sound thesis examination procedures for institutions and examiners. These procedures cover many issues that affect the thesis examination process like the definition of a degree, selection of examiners, criteria to evaluate the contribution of the research, and proposals for future policies and practices.

Keywords
Doctoral thesis examination · Examiner selection · Guidelines for doctoral examiners · Doctoral examination policies

Introduction

In the 1990s and early 2000s, examination of doctoral theses was an idiosyncratic and confusing process, akin to an "art," that could delay completion of degrees (Nelson 1991; Perry et al. 1998; Phillips 1992). As an example of research findings about this examination process in that period, Mullins and Kiley (2002, p. 370) found confusion in their interview study of experienced thesis examiners: "Nor do we have a clear understanding of how examiners undertake the assessment process, what it is they believe themselves to be doing, and why they undertake the time-consuming and stressful task."

However, in the decade or so *after* the early 2000s, a picture emerges of the examination process as a somewhat more regularized "craft" process rather than the older "art" process (Holbrook et al. 2014). Could the thesis examination process in a doctoral candidate's program be carefully synchronized from the top national level down to the candidate's level, to prevent the confusion that had existed in Australia and many other countries? So this chapter addresses the issue: how and why have perceptions, policies, and practices changed over the past decade or so about the examination of a doctoral thesis?

Although the setting of this chapter is Australia, the positions it develops should apply in many countries in Europe and some other countries. Indeed, a study of examiners' reports about 74 PhD theses from many countries found that the differences between Australian and other examiners were "minor" (Mullins and Kiley 2002, p. 371; Pitkethly and Prosser 1995). For example, the European PhD process could be as confusing as Australia's has been (Perry et al. 1998). For example, Denmark's government-selected examiners and the United Kingdom's viva voce examinations are given different weights by different universities. In contrast, a PhD program in the United States was more structured with coursework and a short thesis of about 100–150 pages that was supervised by an internal committee who also participated in examining the thesis. US examiners learned how to examine by being a member of these internal committees before becoming a chair of a committee. Furthermore, confirmation of the thesis proposal appeared to be a more important part of the US PhD process than the examination of the final thesis that includes an oral defense. In research of thesis examiners from several countries, the structure of the US respondents' PhD program made them strongly disagree with respondents from other countries that the process was confusing for supervisors and for students (Perry et al. 1998). That research study supports the strongly

structured approach to examination that is recommended in this chapter. Moreover, the holistic US model provides more safeguards for quality control (Tewari 2012).

The chapter has three parts. First, the recent Australian national definition of a doctorate is noted. Then background research about issues like the selection of examiners and how to define a contribution are discussed. Finally, a staged, standard examination process is proposed.

Definition of a Doctoral Degree

One part of the confusion about the doctoral examination process is uncertainty about the baseline of what *every* doctoral thesis must demonstrate. For example, does each of them have to make a contribution to the literature (Phillips 1992)? This initial high-level uncertainty has been addressed by some countries' accreditation bodies like the recent definitions of degrees by Australian Qualification Framework (2013), while it could also be addressed at university, discipline, and/or department level in other countries like the United States with its more internal accreditation process (Kiley 2009a; Tewari 2012).

The first step in designing any research program is ensuring that it fits the accreditation requirements for the program. In 2013, the Australian government required *all* its doctorates to have a thesis or the equivalent that makes an original contribution to a body of knowledge, covers research methods, and is examined by experts of international standing. That is, the doctoral degree in Australia has these core characteristics:

- A substantial *body of knowledge* at the frontier of a field of work or learning, including knowledge that constitutes an original *contribution*
- Substantial knowledge of *research principles and methods* applicable to the field of work or learning...
- A program of independent supervised study that produces *significant and original research outcomes* culminating in a *thesis*, dissertation, exegesis, or equivalent for independent examination by at least *two external expert examiners of international standing* (Australian Qualifications Framework 2013, pp. 63–64; with italics added)

In Australia, two types of thesis (or its equivalent) fit the three core criteria above: the *research* degree emphasizes research within *a knowledge base* like a PhD does; and the *professional* degree also emphasizes a contribution to knowledge, but it is knowledge about professional *practice in its context*:

> the **research** Doctoral Degree (*typically* referred to as a Doctor of Philosophy) makes a significant and original contribution to knowledge; while the **professiona**l Doctoral Degree (*typically* titled Doctor of [field of study]) makes a significant and original contribution to knowledge in the context of professional practice. (Australian Qualifications Framework 2013, p. 63; bold and italics added)

One consequence of these two different emphases is that a *research* thesis should explicitly describe its contribution to knowledge in a discipline while noting its lesser

contributions to professional practice in the later "Implications for policy and practice" section of its final chapter. In contrast, a *professional practice* thesis should explicitly detail its contributions to knowledge about the professional practice of the candidate and the development of their organization or community of practice. In brief, the two types of thesis have different emphases about disciplinary knowledge and professional practice.

In addition, new types of PhD such as the "PhD by publication" are emerging in diverse disciplines and have been adopted by some Australian universities (e.g., University of Southern Queensland 2016). And doctoral theses in Creative Arts or Education may include portfolios of projects bookended by an Introduction and Discussion chapter. Presumably, these types of doctorate fit within the "exegesis or equivalent" phrase about a doctoral degree's outcome in the Australian Qualifications Framework requirements above. But, essentially, the recent definition of the degree reduces confusion – a doctoral degree *must* now make a contribution to knowledge by using research methods and principles, as judged by international experts.

Research About the Examination Process in the 1990s and Early 2000s and Since

The examination process developed in this chapter is based on previous research in the 1990s and early 2000 as well as recent research such as Holbrook et al. (2014). That research showed confusion about the process in the 1990s and early 2000s, but research in the last decade or so has started to reduce that confusion. The areas of research considered are selecting examiners and how examiners arrive at their judgment, the criteria used, definition of a contribution, thesis structure and style, and modern research after 2010.

Selecting Examiners and How Examiners Arrive At their Judgment

Consider one of the early steps in the examination process – selecting examiners who will judge a thesis. Examiners are the "gatekeepers" who decide whether a postgraduate research student will be awarded their degree and so be allowed into an international community of scholars. More than a decade ago, in the 1990s and early 2000s, there seemed to be no consistent rules about selecting examiners. For example, Nelson's (1991, p. 25) study found: "The guardianship of standards was limited to so few and by a means that allowed no open selection of gatekeepers [that is, examiners] and no displays to demonstrate their competence." Then, some examiners used many criteria to select the examiners (based on Perry et al. 1998; Lawson et al. 2003; with quotations from the respondents or universities added):

- *Knowledge of the content area* – "knowledge in the field," "who wrote the papers in the literature review," "know the area," and "an expert in the area" (Perry et al. 1998). The university guidelines normally stated that the examiner "shall have a proven track record of research and scholarship in a field of study

relevant to the subject matter on which the thesis to be examined is based" (Lawson et al. 2003, p. 33).

- *Experience of the thesis examination process*, namely, examiners needed to have a degree equivalent to that which they are examining. Doctoral examiners learned by firstly examining master's theses and looking at examples of different types of examiners' reports during their training as examiners.
- To a far lesser extent, *knowledge of the methodology* (including an appreciation of the scientific paradigm) – "sympathy to methodology" and "knowledge of different methodologies."
- *Sympathy to students* (i.e., an awareness of how hard it is for them to achieve the standards), as shown in their examination track record – "willing to be decent" and "willingness to accept alternatives."
- Return of their examiner's report *within the time required* – "timeliness."

The worst examiners were those who were narrow-minded "know-alls" or "dogmatic in approach" and those who were obsessive about statistical details (Perry et al. 1998). A later study includes these examiners among the "mad and bad" examiners that supervisors should avoid (Kiley 2009b, p. 889). In contrast, good examiners have a balance of positive and negative remarks in their reports – they maintain standards of rigor but are fair and have constructive comments.

But procedures appear to have become more standardized in the last decade. Luca and Wolski (2013, pp. 26–27) recommend to Australian Deans and Directors of Research that the appointment of examiners should be based on the following criteria based on the Australian Qualifications Framework: "Examiners must be recognised as international experts in the field or discipline of the thesis. Examiners must be external, independent and hold a degree at the level that they are examining or higher, unless there are exceptional circumstances that are approved by the appropriate institution's committee." The last recommendation is often included in the examination of professional doctorates where an industry professional's expertise is needed.

Next, how do examiners arrive at their judgment of a thesis? Researchers investigating that question in the 1990s and early 2000s revealed a range of answers. For example, Mullins and Kiley (2002) found that different examiners read the thesis differently. Another study developed a synthesis of the many processes used by examiners (Perry et al. 1998):

- Flick through the table of contents, the acknowledgments, and the list of references.
- Read through the methodology and findings.
- Read the literature review.
- Read the conclusions.
- Read it again from beginning to end (but some examiners did this first).

These processes used by the examiners appeared to be done with care, and the actual time taken to examine a doctoral thesis was equivalent to about 3 or 4 days full time over a period of weeks – remarkably the same for them all (despite the different lengths of theses they must receive).

Finally, the respondent examiners in that study did not want to have a standard format for their reports (Perry et al. 1998). But note this idiosyncratic aversion to a standard format for reports is not supported below. They appeared to have become somewhat idiosyncratic and had learned their craft by actually "doing it" for honors and then masters theses, with only occasional help from a mentor or two when an internal examination was being done. Then, there was little training or guidelines for examiners, and their reports had limited distribution to peers. Moreover, they had rarely received feedback after they had submitted their reports, to allow them to reflect on their examination processes.

Since then, in the last decade, how examiners arrive at their judgment of a thesis is still somewhat idiosyncratic, but some universities do run training programs for examiners. In at least one university, sessions on writing examiners' reports are well attended (Blass et al. 2013).

Criteria

Contributing to the lack of clarity of the doctoral examination process in the 1990s and the early 2000s was inconsistent use of criteria by examiners. At least four studies provided a picture of confusion about the criteria used by doctoral examiners in that period. Firstly, Nelson (1991) analyzed 219 examiners' reports of Australian National University PhD theses and the Notes for Examiners sent out by all Australian universities and surveyed 83 Australian examiners in the history discipline. He concluded that examination processes were not standardized; indeed, they were almost unknown and unknowable – "Just how examiners come to their individual decisions about what an examiner's report is, and what standard is required of a PhD thesis, is a *mystery*" (Nelson 1991, p. 25, emphasis added).

Secondly, Nightingale (1992, p. 169) surveyed staff at the University of New South Wales and found a similarly bewildering picture about PhD examination criteria within that university:

> . . .there is not even agreement within one institution about what conferring the degree certifies, and that even where there is a serious attempt to give adequate direction to examiners, the criteria remain generalised and difficult to interpret.

Next, Johnston (1997, p. 346) considered 51 PhD examiners' reports at one university and found similar confusion, with "inconsistencies and variations in examiners' reports."

Another early study of the debate about criteria looked at the instructions sent to examiners of doctoral theses at six Australian universities (Perry and Cavaye 2004), as Table 1 shows. All of the six universities agreed that a doctoral report should look as such and should be presented in the appropriate manner (in terms of writing style and academic convention). The issues of "making a contribution" and displaying evidence of having successfully completed one's research apprenticeship are also accepted criteria for dissertations by several of the universities. However, beyond

Table 1 Earlier, different criteria used for examining dissertations (Source: Perry and Cavaye 2004)

Criterion	Number of universities ($n = 6$)
Report presentation	6
Research apprenticeship: capacity to conceive, plan, and conduct research; capable of working independently	5
Contribution: carried out original/significant research in the field; major advancement; contribution to knowledge in the field	5
Literature: relevant to thesis, showing understanding of the field of research	4
Analysis of information/data	3
Research question: justification and delimitation	2
Methodology: appropriate choice	2
Publishable output: suitable for publication	2
Conclusions: soundly based, showing implications	1

this, universities presented a mixed message to examiners. For instance, some examination report forms required examiners to evaluate components of the dissertation (e.g., the adequacy of the literature review), while other universities did not require this. Incidentally, the criteria were neither placed on the actual examiners' form nor were mentioned in an accompanying document providing guidance to examiners. When criteria were placed on the form itself, usually the criteria were mentioned again (and expanded upon) in an accompanying document. Unfortunately, in some cases the criteria mentioned in the accompanying notes were not consistent with the examination criteria placed on the form. And all this confusion occurs before the individual examiners enter the picture with their own idiosyncratic opinions.

This picture of confusion in the thesis examination process was even present in a study of one discipline's examiners, those in marketing. Perry et al. (1998) explored how different types of theses are examined in that social science discipline, using in-depth interviews with experienced examiners in Australia and New Zealand, the United States, and Europe. Essentially, they found that while some examiners appeared to follow a process that has *some* similar characteristics at a "global" or "big picture" level (Holbrook et al. 2014, p. 986), that picture is more straightforward than the reality faced by *individual* supervisors and candidates facing individual examiners.

Since then, in the last decade, typical guidelines for external examiners of theses determine "the extent to which the candidate has demonstrated (a) originality, (b) critical insight, (c) capacity to carry out independent research; and (d) the extent of the contribution to knowledge made by the thesis, and in particular its contribution to the understanding of the subject with which it deals" (e.g., Edith Cowan University 2016; University of Newcastle 2016a). But one hopes that more modern training of examiners ensures that examiners do actually follow these criteria; in earlier research among examiners, as many as two-thirds of examiners did not take a

university's particular criteria into account when assessing a thesis (Mullins and Kiley 2002, p. 380; Perry et al. 1998). Recently, Holbrook and Bourke (2008) found some consistency among science and education theses, but did notice that the comments of a small minority were inconsistent with each other. In conclusion, differences between respondents on an important issue such as criteria remain diverse enough to make examinations a risky rite of passage for an individual student.

The Definition of a "Contribution"

An aspect of the criteria used to judge a thesis is the issue of a contribution: exactly what is a thesis' "contribution to knowledge?" In the 1990s, Phillips (1992, p. 128) explored the meaning of a "contribution" in in-depth interviews with 50 students and 50 staff at British universities and found confusion: "students and staff use the same word to describe a range of different concepts."

Other early research among examiners in Australia and New Zealand also found confusion about a contribution (based closely on Perry et al. 1998). That research asked examiners in the marketing discipline to answer an open-ended question about how they defined a contribution. Answers included *general* definitions such as "leading to publication," "adds to what we know," "provides insight," "integrates different things we know," and "conceptualizes something new." But this overall picture is more straightforward than the actual reality faced by *individual* supervisors and candidates, as answers to a further question demonstrated. The open-ended question was followed by a more precise, closed-ended question asking examiners to *rank* of the following diverse descriptions of a contribution (the list was adapted from Phillips 1992):

- Saying something nobody has said before
- Carrying out empirical work that hasn't been done before
- Making a synthesis that hasn't been made before
- Using already known material but with a new interpretation
- Trying out something in this country that has previously only been done in other countries
- Taking a particular technique and applying it in a new area
- Bringing new evidence to bear on an old issue
- Others (please specify)

The examiners' rankings of these descriptions were *very* different. The only pattern of agreement was that the first two items were often ranked as most important. However, an explanation for this agreement about the first two items could be the *imprecision* of the descriptions of those two items, compared to the descriptions of the other items. Thus, the examiners appear to agree only when the level of precision is too low to offer much guidance to doctoral candidates and their supervisors.

In contrast, more modern research in the last decade suggests there is an emerging consensus about "contribution" being the value of the contribution to the knowledge in the field, its value to other researchers, and its originality and publishability; these are backed up by the researcher's engagement with the literature, their grasp of methodology, their capacity of independent critical thinking, and the thesis' coherence and quality of presentation (Lawson et al. 2003).

Structure and Style

Over time, the structure and style used in a thesis have become more standardized; that is, some guidelines about structure and style are being established. For example, an article about structure is the most-cited article ever published in *Australasian Marketing Journal* (Perry 1998). And Googling '"chad perry" thesis structure' produces thousands of results from around the world. Essentially, the recommended structure suggests a thesis could have five chapters: introduction, literature review, methodology, analysis of data, and conclusions and implications. Parts of that structure are explained in detail in a chapter of Perry (2013). It provides initial estimates of how many words each chapter should have and how many months each chapter should take to complete.

In turn, examiners should expect to see a thesis that follows a familiar *style*. A country may have its own style manual like Australia's *Style Manual* (Department of Finance and Administration 2002) that many nonacademic and even academic graduates will use after they graduate. But a case could be made that all supervisors and candidates follow an international manual like the American Psychological Association's (APA) *Publication Manual* (American Psychological Association 2015). Examiners should be informed of this standard and of the length of the thesis.

Research Since About 2010

To finish this review of research about the examination process, consider that there has been much modern research about PhD examination since 2010. For example, in the University of Newcastle, Bourke, Holbrook, and their coauthors published 49 papers from 2010 to 2015. Their general themes included exploring doctoral examiners' judgments of quality and the quality and importance of thesis contribution. Some general, but specialist, areas have been part of the ongoing debate such as the contribution of the viva in the examination process, the focus on theory, or more recently ethics in examiners' reports. A list of recent research themes in Table 2 includes examiners' reports in different disciplines, reports based on particular epistemologies, and a focus on the characteristics of the doctoral candidate.

In one study after 2010, Luca and Wolski (2013) recommend that each university should have a specific policy and guidelines for the examination of theses. Such an examination process requires (a) a declaration regarding the conflict of interest from the examiners; (b) transparency throughout the examination process and appropriate

Table 2 Examples of general and emerging themes regarding thesis examination (Source: http://www.newcastle.edu.au/research-and-innovation/centre/sorti/publications/research-into-phd-examination)

General themes	Dates	Authors
How examiners *identify* quality of research theses	2010	Bourke, S and Holbrook, A
How examiners *judge* quality of Australian Higher Degree Research theses		Holbrook, A and Bourke, S
Examiner comments and recommendations on the theses of students with ESL		Holbrook, A., Chen, S., Bourke, S., Holmes, K., and Butler, K
The quality and importance of thesis "contribution"	2011	Bourke, S., and Holbrook, A
The pattern and style of formative feedback presented by PhD examiners in their reports		Holbrook, A., and Bourke, S
Ways of knowing in doctoral examination	2013	Lovat, T., Holbrook, A., and Bourke, S.
Examiner concern with the use of theory in PhD theses		Holbrook, A and Bourke, S
Examining PhD and research masters theses		Bourke, S and Holbrook A.
How examiners understand the contribution of the viva to doctoral examination	2014	Holbrook, A., StGeoge, J., Kiley, M.
The focus and substance of formative comment provided by PhD examiners		Holbrook, A., Bourke, S., Fairbairn, H., and Lovat, T.
Reference to "ethics" in PhD examiner reports: where is it?		Starfield, S., Paltridge, B., McMurtrie, R., Holbrook, A., Bourke, S., Kiley, M., Lovat, T., Fairbairn, H
Evaluation and instruction in PhD examiners' reports: roles and functions		Holbrook, A., Dally, K., Bourke, S., Fairbairn, H., and Lovat, T
Understanding the language of evaluation in examiners' reports on doctoral theses	2015	Starfield, S., Paltridge, B., and McMurtrie, R., Holbrook, A., Bourke, S., Kiley, M., Lovat, T., and Fairbairn, H.
Emerging themes	**Dates**	**Authors**
Underlying dimensionality of doctoral metacognition	2010	Cantwell, R., Scevak, J., and Bourke, S
Identifying individual differences among doctoral candidates: a framework for understanding problematic candidature	2012	Cantwell, R., Scevak, J., Bourke, S. and Holbrook, A.
An analysis of PhD examiners' reports in engineering	**2015**	Prieto, E., Holbrook, A., and Bourke, S
Theory and method in higher education research: exploring doctoral examiner judgments through the lens of Habermas and epistemic cognition		Clement, N., Lovat, T., Holbrook, A.,
		Kiley, M., Bourke, S., Paltridge, B., Starfield, S., Fairbairn, H., and McInerney, D

and clear guidelines to examiners, including guidance in the examination of theses presented in different modes; as well as (c) explicit and accessible examination criteria.

In another study after 2010, Starfield et al. (2015, p. 130) note that an emerging area of research is the use of *evaluative language* in examiners' reports. They recommend that candidates firstly need to recognize constructive criticism and evaluation and whether the evaluation is directed at the thesis or the candidate. They realize that candidates have to negotiate a range of evaluative feedback, differentiating between mandatory requests and optional suggestions. One of their conclusions is that "While it is primarily the thesis that is *appreciated* in the reports, in line with the university's examination criteria, it is often the case that the candidate is also *judged* and the examiner is *affected*."

Another modern development is that many Australian universities distinguish between the examination criteria sent to examiners of the PhD or PhD in creative disciplines and of professional doctorates such as the Doctor of Education, the Doctor of Administration (information systems), or the Doctor of Psychology (e.g., Edith Cowan University 2016). Most of the university guidelines note differences in the structure of the program for the examiners, but the guidelines generally include a statement about the contribution of the research – "make a substantial contribution to learning and demonstrate a capacity to relate research undertaken by the Candidate to the discipline or disciplines within which it falls, at the standard internationally recognised for the degree in the relevant discipline or disciplines."

Furthermore, modern research suggests current institutional policies should contain explicit processes for managing divergent examination outcomes and allowing candidates to appeal against an examiner's judgments such as "If you're unhappy with the outcome of the examination process you have up to 20 business days following notification of the outcome to appeal. You may appeal against aspects of the examination process or the outcome of the examination, but not against aspects of supervision" (Edith Cowan university 2016). Some universities that use three or more examiners develop a matrix of examiners' evaluations to determine what the final recommendation should be (e.g., pass subject to minor revisions; pass subject to major revisions; resubmit to examiners after re-writing – see University of Newcastle 2016). However, the 2016 trend among universities seems to be to select two external examiners (with a third examiner held in reserve in case of a divergence of opinion among the first two examiners). Thereafter, the normal examination policy seems to be that the candidate should undertake the required revisions and prepare a summary document addressing and/or defending the examiners' reports which is reviewed and endorsed by the examiner or by a moderation panel in the relevant faculty.

Proposals for Future Policy and Practice

The above research that has been done since the 1990s and early 2000s has implications for how a modern department should design its doctorate examination process. To enhance the clarity, a department needs to ensure its process is

synchronized with the national, discipline, and university requirements. In effect, the process should be a craft and not the art process it was in the 1900s and early 2000s.

This chapter argues there are many stages in that synchronized thesis examination process.

In effect, the examination process should begin even before a candidature begins. The university, faculty, or department should have guidelines that incorporate the department's, discipline's, university's, and/or national judgments about issue such as the definition of a doctorate, general, and specific examination criteria, the definition of a contribution and selection of examiners, and their training or mentoring to prepare supervisors to be external examiners. At the start of a candidature, the supervisor and the candidate must also be aware of these guidelines, as should the confirmation panel that approves the candidate's initial proposal.

The carefully selected, potential examiners should be sent the formal guidelines (and possibly an electronic copy of an exemplar thesis) to ensure alignment of their own and the institution's expectations, before an examiner's formal appointment. As well as assenting to use these guidelines, the potential examiners should be asked to confirm that they have already examined some theses before, because it is common knowledge that inexperienced examiners should be avoided (Mullins and Kiley 2002). Even processes such as potential examiner receiving an abstract of the thesis when invited to examine have substantially reduced the potential of conflict of interest of examiners about the topic or the methodology (Lawson et al. 2003). Note that supervisors must check all potential examiners are reliable and fair – not "mad and bad" – and so they must "ensure that they know, or at the very least know of, the personality traits of potential examiners" (Kiley 2009b, p. 889). Closer to the thesis' completion, potential examiners should be *selected* using the criteria such as those noted by Luca and Wolski (2013) and the Australian Qualification Framework (2013). They should be formally appointed only after they have agreed with the university or department's guidelines (e.g., about criteria and their weights). That is, the examiners know and agree to work within the department's guidelines *before* the examiners are appointed.

In turn, the supervisors could rely on their own article writing and supervision experience to judge what these examiners will look for when they use the agreed guidelines (Perry 2013). All the steps involved in preparing the thesis for submission are detailed in the checklists in Office of Teaching and Learning (2013, pp. 89–98) or in current websites of universities. Blass et al.'s (2013) "research supervision toolkit," an online tool, provides a pre-submission checklist covering core areas that examiners could focus on. Each university's pre-submission guidelines should include basic information such as a proofreader's checklist that covers details like correct use of Roman and Arabic page numbers and consistent formatting and placement of tables and figures (Office of Teaching and Learning 2013, pp. 9–98).

As noted in previous sections, most universities currently issue detailed instructions to the examiners to forestall idiosyncratic and piecemeal reports. For example, the report could have to address each listed criterion and have headings for comments about:

- Appropriateness of the research domain (e.g., is it appropriate for a professional doctorate? Is the contribution an appropriate one?)
- Demonstration of sufficient knowledge in the research area
- Evidence of sufficient understanding and appraisal of the relevant literature
- Appropriate methodology of data collection and analysis – justified and applied
- Sound results and conclusions drawn and implications discussed
- Thesis presentation or the ability to communicate research findings appropriately

Some Australian and overseas universities have experimented with rating scales for each criterion and in some cases have been found to improve consistency and accountability, and make it easier for examiner to write their report (Albertyn et al. 2007), but not all rating scales have been supported by examiners. Normally, examiners have been told to distinguish between mandatory changes that are required and mere comments and provide citations and references.

Normally, the supervisor and candidate should not be the only persons involved in checking the thesis before it is submitted to the examiners. In some cases, university writing support staff or faculty research offices or school or departmental research coordinators could be involved and some universities require a receipt from an outside professional proofreading service before submission. In addition, some universities encourage candidates to find their own pre-submission readers, even if they can only check the thesis' English expression. In addition, some universities have also built in a department panel or mentor who could finally approve that the checklists above have been used before the thesis is submitted to examiners (e.g., University of Southern Queensland 2016).

All these procedures should produce a report from an external examiner that starts somewhat like this one:

> Overall, I found this thesis to be a delight to read. It is an ideal DBA thesis in the way it investigates a real world contemporary management/marketing problem in a very appropriate way. Moreover, it works well within the unusual constructivism paradigm. The contributions are substantial. I congratulate the candidate.
>
> Because the thesis follows a well-trodden structure, this report of its strengths and weaknesses can be relatively short. I will cover these main aspects of the thesis is this order: research domain, literature review, methodology and presentation. I argue that the strengths far outweigh its very small weaknesses, and only some textual errors need to be considered or made and these are marked with a bullet point. Other changes apart from the bullet pointed ones need not be made, in my view. Please note that I am not an expert in consumption but that I am reasonably knowledgeable about the research methodologies (I wrote the two chapters about them in a well-cited textbook used in several countries). I support many of my points with citations and references.

After 2010, some universities have started to institute sophisticated tracking systems that tracked candidates' thesis submissions: confirmation of supervisors' approval for submission, reasons for selection of external examiners, tracking whether examiners submit their reports within 6–8 weeks, institutional review of examiners' reports and recommendations about levels of changes that candidates needed to make, review of candidates' changes by supervisors and faculty panels,

and final preparations for preparing theses for library collections and student graduation processes.

University or department panels should review the examiner's reports when they are finally returned to the university to ensure the examiners had followed the guidelines and to adjudicate between conflicting reports. Next comes the revisions to the thesis. The candidate will probably not have experience of handling corrections, but the supervisor will have much experience from their writing of articles, and the supervisor should direct the revision process and the writing of a summary about it for the university or department's panel (Perry 2013, Chap. 2, describes this process for an article; Office of Teaching and Learning 2013, pp. 96–97, outlines the process for a thesis). The supervisor should be closely involved in handling the corrections because those corrections are possibly their only feedback about their preparation of candidates for examination. Blass et al.'s (2013) "research supervision toolkit," an online tool, provides a step-by-step process and template for doctoral candidates and their supervisors in working through examiners' reports and agreeing on final revisions.

Finally, universities and their departments should ensure supervisors and examiners are trained and mentored and receive feedback about a completed candidature.

Conclusion

In effect, the senior academics in a business school, the candidates, thesis supervisors, and the examiners should all be synchronized like the editors, authors, reviewers, and readers of a successful journal are synchronized. They must have the same expectations about types of topics and methods, about the structure of the thesis as it is exhibited in exemplars, and about issues like style and citing/referencing.

In conclusion, the examination process of theses needs to move from being an idiosyncratic art to being a craft that involves several people like candidates, their supervisors and higher academics in a university, and examiners, with all of them trying to proceed within an integrated workgroup of professionals.

References

Albertyn, R.M., C.A. Kapp, and B.L. Frick. 2007. Taking the sting out of evaluation: Rating scales for thesis examinations. *South African Journal of Higher Education* 21 (8): 1207–1221.

American Psychological Association. 2015. *Publication manual of the American psychological association*. 6th ed. http://www.apastyle.org/manual/index.aspx. Accessed 7 Apr 2015.

Australian Qualifications Framework. 2013. *Australian qualifications framework*.. http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf. Accessed 18 Apr 2016.

Blass, E., S. Bertone, J. Luca, C. Standing, R. Adams, H. Borland, R. Erwee, A. Jasman, K. Tickle, and Q. Han. 2013. *Developing a toolkit and framework to support new postgraduate research*

supervisors in emerging areas. Sydney: Report to the Office of Teaching and Learning, Department of Industry, Innovation, Science, Research and Tertiary Education.

Department of Finance and Administration. 2002. *Style manual for authors, editors and printers*. 6th ed. Brisbane: Wiley.

Edith Cowan University. 2016. Research assessments – guidelines for examination of PhD theses. https://intranet.ecu.edu.au/data/assets/pdf_file/0010/418726/PhD_exam_guidelines.pdf; http://intranet.ecu.edu.au/research/for-research-students/research-journey/thesis-examination/information-for-examiners and http://intranet.ecu.edu.au/research/for-research-students/research-journey/thesis-examination/appeals. Accessed 9 May 2016.

Holbrook, A., and S. Bourke. 2008. Consistency and inconsistency in PhD thesis examination. *Australian Journal of Education* 52 (1): 36–48.

Holbrook, A., S. Bourke, H. Fairbairn, and T. Lovat. 2014. The focus and substance of formative comment provided by PhD examiners. *Studies in Higher Education* 39 (6): 983–1000.

Johnston, S. 1997. Examining the examiners: An analysis of examiners' reports on doctoral theses. *Studies in Higher Education* 22 (3): 333–347.

Kiley, M. 2009a. Rethinking the Australian doctoral examination process. *Australian Universities Review* 51 (2): 32–41.

Kiley, M. 2009b. 'You don't want a smart Alec': Selecting examiners to assess doctoral dissertations. *Studies in Higher Education* 34 (8): 889–903.

Lawson, A., H. Marsh, and T. Tansley. 2003. Examining the examiners. *Australian Universities Review* 46 (1): 32–36.

Luca, J., and T. Wolski. 2013. Higher degree research training excellence: A good practice framework. Presentation of Final Report to Council of Deans and Directors of Graduate Students for Office for Learning and Teaching. www.ddogs.edu.au or www.learningandteaching@deewr.gov.au.

Mullins, G., and M. Kiley. 2002. "It's a PhD, not a Nobel Prize": How experienced examiners assess research theses. *Studies in Higher Education* 27 (4): 369–386.

Nelson, H. 1991. The gatekeepers: Examining the examiners. *Australian Historical Association Bulletin* 68: 12–27.

Nightingale, P. 1992. Initiation into research through writing. In *Starting research – Supervision and training*, ed. O. Zuber-Skerritt. Brisbane: Tertiary Education Institute, University of Queensland.

Office of Teaching and Learning. 2013. *Supervision of higher degree by research students: Supervisor resource book*. Canberra: Department of Education. http://researchsupervisiontoolkit.com/page/rst-ebook. Accessed 3 Apr 2016.

Perry, C. 1998. A structured approach for presenting theses. *Australasian Marketing Journal* 6 (1): 63–85.

Perry, C. 2013. *Efficient and effective research*. Adelaide: ABE Publications.

Perry, C., and A. Cavaye. 2004. Australian universities' examination criteria for DBA dissertations. *International Journal of Organisational Behaviour* 7 (5): 411–421. http://pandora.nla.gov.au/pan/10282/20040713-0000/www.usq.edu.au/resources/perrycavaye.pdf. Accessed 28 Apr 2016.

Perry, C., J.L. McPhail, and L. Brown. 1998. How are marketing theses examined? *Proceedings*, Australia and New Zealand Marketing Academy Conference (ANZMAC98), University of Otago, Dunedin, Dec 1998.

Phillips, E. 1992. The PhD: Assessing quality at different stages of its development. In *Starting research – Supervision and training*, 119–136. Brisbane: Tertiary Education Institute, University of Queensland.

Pitkethly, A., and M. Prosser. 1995. Examiner's comments on the international context of PhD theses. In *Research into higher education: Dilemmas, direction and diversions*, ed. C. McNaught and K. Beatte, 129–136. Melbourne: Higher Education and Research and Development Society Australasia Victoria.

Starfield, S., B. Paltridge, R. McMurtrie, A. Holbrook, S. Bourke, H. Fairbairn, M. Kiley, and T. Lovat. 2015. Understanding the language of evaluation in examiners' reports on doctoral theses. *Linguistics and Education* 31: 130–144. https://doi.org/10.1016/j.linged.2015.06.004.

Tewari, D.D. 2012. Examination of doctoral theses/dissertations: Models practices, and guidelines. *African Journal of Business Management* 6 (9): 3438–3448. https://doi.org/10.5897/AJBM11.652. http://www.academicjournals.org/AJBM. Accessed 24 Apr 2016.

University of Newcastle. 2016a. Research into the PhD examination. Study of Research training and Impact (SORTI) https://www.newcastle.edu.au/research-and-innovation/centre/sorti/publications/research-into-phd-examination. Accessed 9 May 2016.

University of Newcastle. 2016b. Thesis examination guidelines. http://www.newcastle.edu.au/__data/assets/pdf_file/0020/72470/Thesis-Examination-Guidelines-Nov-2015.pdf. Accessed 11 May 2016.

University of Southern Queensland. 2016. Examination process. http://www.usq.edu.au/research/research-students/current-research-students/examination. And 'PhD by publication procedure' http://policy.usq.edu.au/documents/13383PL. Accessed 20 May 2016.

A Niche Professional Doctorate: An Effective and Timely Program for Career-Focused Managers

20

Chad Perry and Angele Cavaye

Contents

Abstract

Professional doctorate degrees are becoming more common. This chapter contributes to the literature about those degrees by exploring how a niche version of the degree could follow the new Australian Qualifications Framework. More particularly, the *aim* of this chapter is to identify the features of a fourth version professional doctorate degree for career-focussed managers and professionals who want to complete an effective and efficient degree and then concentrate on further progression in their nonacademic career. It is an "effective" degree because it meets the needs of

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candidates and examiners. It is an "efficient" degree because it is completed in a timely way – with little wasted time. The candidates will have an MBA and usually be early- or mid-career practitioners who very rarely do academic research after they graduate. The chapter covers core aspects of their professional doctoral program: accreditation, the paradigm underlying the research, the case research methodology, thesis structure, style of the thesis, and supervision, examination, and publication. The chapter has management implications for university business school managers and other higher education providers in Australia and overseas.

Keywords
Doctorates · Professional doctorates · Australian Qualifications Framework · Case research · Thesis structure

Introduction

As the number of MBA degree holders increases, so does the demand by managers and professionals for a doctorate program to follow their MBA degree. Doctorate programs for professionals in social sciences have developed in many countries outside the United States (Kot and Hendel 2012; Park 2005; Wildy et al. 2015); in many disciplines like nursing, education, and business (Miller 2010; Zusman 2013); and in many forms (Erwee 2004; Sarros et al. 2004). For example, worldwide, there are more than 250 professional doctorates called Doctorates of Business Administration (DBA) (Office of Teaching and Learning 2015, p. 5). There have been at least three "generations" in this development of the professional doctorate degree (Malfoya and Yatseb 2003; Maxwell 2003, p. 280). The first-generation doctorate involved coursework and a shorter PhD-styled dissertation (Costley and Lester 2012). The second generation involved more experiences like "seminar presentations and industry-relevant research reports" (Sarros et al. 2004, p. 441). The third generation is more individually and less professionally oriented, customized for an already established person with much experience (Costley and Lester 2012). However, there are some difficulties with these approaches (Zusman 2013). Indeed, the new Australian Qualifications Framework (2013) insists that examination of *all* doctorates must be based on an output like a thesis or its equivalent that makes an original contribution to a body of knowledge using an established research method, with the thesis' examination being done only by external expert examiners with international reputations. This type of professional doctorate could perhaps be called a fourth *version* rather than a fourth "generation" because it is not a direct descendant of earlier generations. The new Australian Qualification Framework policy is a catalyst for the niche degree of this chapter, but the degree's features could be adopted by some professional doctorate providers in other countries.

The *aim* of this chapter is to identify the design features of a fourth version professional doctorate that targets career-focussed managers and related professionals who want to complete an effective and efficient degree and then concentrate on further progression in their nonacademic career. It is "effective" because it meets

the needs of candidates and examiners. It is "efficient" because it is completed in a timely way – with little wasted time. The candidates will usually be early- or mid-career practitioners who rarely do academic research after they graduate, rather than other candidates who do a professional doctorate that has an objective like better recognition of their expertise or professional achievement (Costley and Lester 2012, p. 2; Grabowski and Miller 2015) or a legacy for others. The candidates doing the fourth version degree will have done well in their MBA program and have already advanced in their career using time management techniques in a time-constrained professional life.

There is a gap in the literature about such a timely doctorate because the literature rarely discusses a professional practice doctorate's financial and time costs for the candidate and the university (except by, e.g., Zusman 2013). Investigating such a doctorate is also important because most research doctoral program graduates do not become academics (Gould 2015), and so professional practice doctoral programs need not aim at producing academics. Moreover, most academic research has little value for real-world managers (O'Brien et al. 2010), and so why should all managers and professionals doing a professional doctorate need to learn in detail how to do the common types of research that are the basis of most published management research but do not lead to "actionable knowledge" (Pearce and Huang 2012, p. 248)? Many professional doctorate programs assume that their graduates will themselves undertake these several types of research in their workplace, and so the programs provide coursework about them. But our niche degree graduates will rarely later do such academic research. Nevertheless, they must carefully carry out their thesis' methodology and know enough about the research principles and of other methods of their field to be able to explain how their thesis' methodology is more appropriate than alternative methodologies (Australian Qualifications Framework 2013, p. 63). In other words, the candidates in our niche professional doctorate need socialization about critical thinking and clear writing more than they need socialization about being a researcher/scholar in the workplace (Office of Teaching and Learning 2015). In brief, this chapter's version of a timely professional doctorate aims to teach rigorous thinking and clear thinking and to uncover new and actionable knowledge.

Managers and professionals in this fourth version of a professional doctorate may now represent only a niche in the doctoral market for universities, but that niche should grow in size with the increasing rate of change within the business world. In particular, the market for the degree should grow in Australasia and in the fast-growing Asia-Pacific region (Sarros et al. 2004). In brief, this chapter's doctorate using the case research methodology may be appropriate for the career-focussed managers and professionals in many parts of the modern world (Davis et al. 2006) and not just in Australia.

The design principles for the doctorate discussed here are based on the literature and on a gradual evolution toward the ideal described here during our supervision of more than 53 doctorates. The chapter covers core aspects of the niche doctoral program: accreditation, the paradigm underlying the research, methodology, thesis structure, style of the thesis, and supervision, examination, and publication.

Accreditation of a Doctoral Program

The first step in designing any doctoral program is ensuring it fits the national requirements for a doctoral program. For example, the Australian government requires that *all* its doctorates have a thesis that makes an original contribution to a body of knowledge, covers research methods, and is examined by experts of international standing. Essentially, the doctoral degree in Australia has three core characteristics of making a contribution to knowledge, appropriate research methods, and a thesis examined by international experts:

- A substantial *body of knowledge* at the frontier of a field of work or learning, including knowledge that constitutes an original *contribution*
- Substantial knowledge of *research principles and methods* applicable to the field of work or learning
- A program of independent supervised study that produces *significant and original research outcomes* culminating in a *thesis*, dissertation, exegesis, or equivalent for independent examination by at least *two external expert examiners of international standing* (Australian Qualifications Framework 2013, pp. 64–65; with italics added)

In Australia, two types of thesis fit the three core criteria above: the *research* degree type emphasizes research within *a knowledge base* like a PhD does and the *professional* degree type that emphasizes a contribution to knowledge about *professional practice in its context*:

> the **research** Doctoral Degree (*typically* referred to as a Doctor of Philosophy) makes a significant and original contribution to knowledge; while the **professiona**l Doctoral Degree (*typically* titled Doctor of [field of study]) makes a significant and original contribution to knowledge in the context of professional practice. (Australian Qualifications Framework 2013, p. 63; bold and italics added)

One consequence of these different emphases is that a *research* thesis explicitly describes its contribution to knowledge in a discipline while noting it lesser contributions to professional practice in the later "Implications for Policy and Practice" section of the final chapter. In contrast, a *professional practice* thesis explicitly details its contributions to knowledge about the professional practice of the candidate and the development of their organization or community of practice. In brief, the two types of thesis have different emphases about disciplinary knowledge and professional practice.

This difference of emphasis influences the design of our niche program that aims at producing a timely professional practice thesis. A professional *practice* degree's aims may change as the research progresses and may involve complex situations that cover several disciplines, that is, be "transdisciplinary" (Costley and Lester 2012, p. 1). Overcoming these changes and mastering multiple bodies of knowledge will take some time. Ideally, a professional practice thesis could be grounded in the

action research methodology (Abraham 2012; Zuber-Skerritt 2011) and describe two or three full spirals of plan/act/observe/reflect with members of a "set" of participants that gather *emerging* knowledge about several bodies of knowledge over time (Zuber-Skerritt and Perry 2002). That is, the first one or two cycles are often spent identifying a research problem for a thesis: "In action research you typically start out with a fuzzy question ... [Then] your methods and answers become less fuzzy and so your questions become less fuzzy" (Gummesson 2000, p. 112). Each spiral would involve reflection by both the set members and the candidate (for example, Moore 2015). This action research approach may be especially attractive to many managers and professionals with stories to tell about their workplaces and reflect upon them – "senior managers with a great deal of lived experience, knowledge and wisdom, producing [such a thesis] is more meaningful, challenging and enjoyable" (Zuber-Skerritt 2007, p. 35). Although it will be attractive to some manager/candidates, other manager/candidates may find that an action research thesis may not be as efficient to research and write, or as straightforward to examine, as are other theses like the niche program's thesis below that uses the case research methodology (Herr and Anderson 2005).

In brief, in contrast to more conventional doctorates, this chapter's fourth version of a professional doctorate may be more straightforward and be finished sooner. It starts with a research problem that the candidate can relate to their MBA studies and to their future career plans, right from the beginning of the research program. And their thesis can be grounded in just one or two "parent" theories or disciplines within a body of knowledge that are involved in solving an overall research problem (Perry 2013, p. 33). So the research professional doctorate using the case research methodology described next is particularly appealing to career-focussed managers.

Research Paradigm for the Niche Doctoral Degree

An understanding of research paradigms underlies the type of professional practice doctorate advanced here. Indeed, a paradigm underlies all research and should be addressed in a thesis (Phillips and Pugh 2000), regardless of whether the degree is a research doctorate or a professional practice doctorate. A *paradigm* mirrors what is essential, legitimate, and reasonable for a researcher (this section closely follows Perry 2013). Scientific paradigms have been grouped into the four categories of positivism, critical theory, constructivism, and realism (based on Guba and Lincoln 2005; Perry 2013). Of these, the realism paradigm is particularly appropriate for a professional practice doctorate for managers and professionals, as this section demonstrates next.

In detail, the *positivism* paradigm that dominates social science research assumes a tangible and apprehendable reality driven by laws (Guba and Lincoln 2005). However, in social science research, the relationships and strategies that determine outcomes are neither tangible nor easily apprehendable constructs because the researcher is investigating many interacting humans, each of whom can learn from their experiences and change their behaviors (as can the researcher).

Two alternative paradigms to positivism are constructivism and critical theory. *Constructivism* is based on multiple constructed realities, that is, subjective realities of many *individuals*; ethnography and participant observation are example methodologies within this paradigm. However, *one* individual's meanings attributed to management phenomena do not independently decide the strategic outcomes of an enterprise in the external world, for an enterprise's several internal and external stakeholders decide these outcomes (Gummesson 2000).

Similarly, the other alternative paradigm of *critical theory* downplays the existence of a window to an outside reality or truth; instead, subjective perception by a *group* is the reality. Action research is an example methodology within this paradigm and may be appropriate for a professional practice doctorate that aims at organizational transformation (Zuber-Skerritt and Perry 2002). Our niche candidates may not have the time or the need to be involved in shaping or altering a perceived reality of a group; even those candidates tasked with organizational transformation may use their thesis to uncover *how* to do it and then actually do the transformation after graduation. In brief, the three paradigms above are inappropriate for our niche candidates' management research.

So consider the fourth paradigm of *realism* (Perry et al. 1999). The realism position is a researcher seeks knowledge about a real social science world that is difficult to measure because it is relatively "unobservable" (Godfrey and Hill 1995). There is a world "out there" in which relationships exist between stakeholders, and these external influences determine the outcomes of enterprise strategies more than do the subjective preferences of a manager and professional or any one other person – "The real decisions are made in the world outside – among consumers, middlemen, competitors, politicians, legislators and trade organisations" (Gummesson 2000, p. 105).

In brief, the realism paradigm is a particularly appropriate research paradigm for the career-focussed managers and professionals undertaking this niche doctorate degree.

The Case Research Methodology for the Niche Degree

Case research within that realism paradigm is possibly the most appropriate methodology for our niche degree. The overriding research problem of a doctorate relevant for a career-focussed manager will not be about an abstraction; the problem be about a contemporary, relatively complex, difficult-to-measure social science phenomenon involving people whose behavior cannot be manipulated by a researcher. *Case research* is one well-developed methodology for investigating such phenomena, and alternative methodologies like experiments, surveys, archival analysis, and histories are not as appropriate (Yin 2014, pp. 5–15). Other possible methodologies like focus groups can be incorporated into a case research thesis as sources of data for the case research, as noted in the seventh step below.

Case research involves eight *steps* (Perry 2013), and the first is especially relevant to our niche degree's need for effectiveness as well as efficiency. That first step is ensuring the overall research problem is appropriate (Colebatch 2002; Yin 2014) – for the niche degree that research problem is a "how" or "why" problem that cannot

be answered with a simple yes or no; it must be about a real world, context-dependent situation and not be about an abstraction (Yin 2014, p. 135), and it must be about a research problem that is relatively unexplored in the literature so that it makes a contribution (Phillips 1992, pp. 128–129). It will be about management or professional *practice*; examples are: "How can funeral homes market their services in Australia?" (Perry and Morelli 2015), and "How can a healthcare supply chain be managed, with particular reference to an armed forces healthcare supply chain in Malaysia?" (Basari 2009). That is, case research involves the context-dependent knowledge that is required for the development of career managers and professionals into the "virtuoso" experts that that they aim at becoming (Flyvberg 2006, p. 221). In brief, for the purposes of this professional doctorate program, case research is a more appropriate methodology than alternative methodologies like an experiment, a survey, archival analysis, and history (Yin 2014).

Case research is "midrange" between the details of just one situation and the generalization of concepts that are thought to apply to many situations (Ozcan and Eisenhardt 2009, p. 253). So what is a "case" in the niche degree? A case could be a type of event or project or be about a relationship like the relationship between marketing managers in a supply chain. The number of cases is usually about four or so; more than this number makes data analysis and reporting too word-consuming; and less than this number limits the analytic generalization that can be done because their too-few contexts make generalization to other situations too shallow or narrow. To investigate just *one* case needs to be justified on at least one or more of the five criteria in Yin (2014, pp. 51–53).

The usual source of data in case research is semi-structured interviews, but other sources could be documents scavenged at interview sites and from the Internet, direct observation, focus groups and even participant observation, and physical artifacts (Yin 2014, p. 135). For interview researchers, a key question is: "How many interviews are enough?" The answer is 15–25 (Gaskell 2000; Perry 2013). One way of ensuring case research interviews are useful is to start with some convergent interviews (Perry 2013; Rao and Perry 2003, 2007). In brief, case research could have a first stage of about 5 convergent interviews with experts and then have about 15 or so second-stage case interviews with practitioners (e.g., about 3 or 4 triangulating interviews in each of about 4 or 5 cases), to make a total of about 15–25 interviews. Perhaps a modern method to transcribe tapes of interviews is to use Google to search for "appstore"; then search for "voice to text dictation apps," with ratings of "4 stars +." Excerpts from these transcriptions will be in Chap. 4 of the thesis. But note that several authorities argue that (time-consuming) *computer*-assisted analysis of such data is not essential or even desirable. For example, Yin (2014, p. 129; italics added) says, "... even under the best of circumstances, nearly all scholars express strong caveats about any use of the computer-assisted tools."

Another step in systematic case research should be assessing the quality or rigor of the research. Candidates could do that step by covering King and Horrocks' (2010) or Healy and Perry's (2000) detailed establishment of quality criteria for realism research or Yin's (Yin 2014, p. 135) more used criteria. The penultimate step in systematic case research is data analysis. The analysis establishes a final set of

higher-order major themes (or meta-themes) that are present in all or most cases (Taylor and Gibbs 2010) and provide direct answers to the research issues. This analysis can be commonly done by hand (Perry 2013; Yin 2014, p. 135) or with somewhat more constructivist software like Leximancer. Generally, there are 10–15 themes for a doctoral thesis (Perry 2013). The reporting of the data analysis focusses on cross-case and on cross-cluster analysis to derive a deeper understanding of the cases' similarities and differences; doing this analysis of rival patterns across cases raises insights that help address the research issues.

The eighth, final step in systematic case research is the analytic generalization in the final chapter of the thesis. Analytic generalization in case research does not *statistically* generalize to a sampled population; in contrast to that minor form of generalization, case research produces a theory that can be *analytically* generalized (adds) to other theories about somewhat similar contexts (Yin 2014, pp. 20, 40–45). So the final chapter fits the findings around previous researchers by using words like "extends," "adds to," "augments," "explains," and "contributes."

The Structure of the Thesis

Candidates in the niche doctorate program should use a thesis structure that has been already been proven. Having a standard structure will allow the candidate to use previous theses that are "exemplars" of that structure and that set the expectations of standards that have to be met in the thesis. (An authority, Huff 1999, recommends that scholars use exemplars from their target journal to plan their article writing.) One of the several established structures that could be used is the structure suggested by Perry (2011, 2013). An early article about it is the most-cited article ever published in *Australasian Marketing Journal* (Perry 1998). And Googling "Chad Perry's" thesis structure produces thousands of results from around the world. Essentially, the structure suggests a thesis could have five chapters: (1) introduction to the overall research problem, (2) literature review with two "parent" theories and a conceptual framework based on them about a solution to the thesis' research problem, (3) methodology to address research issues/questions developed in the previous chapter, (4) analysis of data and findings, and (5) conclusions and implications. The two "parent" theories are so called because they provide concepts that are incorporated into the conceptual framework that guides data collection and analysis about the research problem. Incidentally, these parent theories provide an early check that a contribution will be made – a candidate can place them or core themes within them into an electronic library database with quotation marks around them, and with AND between them, to check if there is much extant literature. This early checking is appropriate for progressing a timely degree. In the thesis, each parent theory is covered in four or five themes, with the first theme describing and defining the parent theory. The other themes are aspects of the parent theory that are increasingly relevant to the research problem – they can often be suggested by Google Scholar by typing the parent theory into the box.

Now consider the length of such a thesis. The number of words in a thesis is not standardized; and does the length of thesis include the words in the list of references and appendices, and is the stated length a maximum or minimum? There are several answers to these questions. For example, the authoritative Phillips and Pugh (2000, p. 54) state a thesis "may be 50–60,000 words," presumably referring to the maximum number of words and including the list of references and appendices, etc. Alternatively, Murray (2002, p. 39, 59) says a PhD's length is approximately 80,000 words. As well, she says a DBA's length is 40,000 words but notes that a DBA has assignments that are additional to the thesis, and some Australian universities similarly have a 40,000–50,000 word thesis that is supplemented by a portfolio of other works (Clerke and Lee 2008). A leading work-based learning university, Middlesex, has 50,000 words for its PhD thesis (and 30,000 words if the thesis is about a major public work of the candidate). Overall, the length should not be determined in a mechanical way (the Australian Qualifications Framework does not even mention length), but the time-constrained manager writing a timely thesis cannot risk wasting time by writing more words than necessary (just as a time-constrained academic should not waste time writing an article that is longer than a journal accepts). So the *planned*, target length for the niche thesis discussed here could be about 50,000 words from the start of the first chapter to the end of the final chapter, provided the "Justification" section of the first chapter and the "Conclusions/Contributions" section of the final chapter are thorough. Additional words about the data or the research setting could be relegated to appendices of the thesis.

The five-chapter structure noted above enables planning for the doctoral program for it allows a candidate to plan the number of pages or words for each part of their thesis. It even allows a very rough plan for the time spent on each chapter. Table 1 is the output of a spreadsheet used for these purposes, using estimates of page numbers for the chapters of some exemplar theses. In brief, a standard thesis structure guides candidates about how to do research, and it provides exemplars and planning tools.

Style of the Thesis

To speed up the writing process, both the supervisor and the candidate should use the same style manual; for example, they should agree on whether a comma is required after the second last item in a list of items, whether a capital letter is used after a colon, and whether headings require a capital letter for every word. The candidate may already use a style manual at their workplace, but the supervisor should not be expected to learn the differences between each candidate's style manual. Moreover, many candidates do not even know that their work place has a style manual, or they may plan to go to a more senior role in another workplace with a different style manual (or their country may not even have a style manual). So the niche program could use the supervisor's and most candidates' *national* style manual. If the doctoral program has more international candidates than the home university, a case could be made for all niche candidates, and their supervisors use the relatively international standards of the American Psychological Association's (APA) *Publication*

Table 1 Planning spreadsheet for thesis lengths

Enter your own total number of pages and months, to replace the numbers in bold below. The percentages used to calculate pages, words, and months are averages of several theses, so they are only approximate. However, the *total* pages and months are certain. For example, perhaps have 160 pages in total, of about 310 words per page. Find an estimate of the number of pages for each **section** of chapter by averaging the percentage of the section in each chapter in an example thesis. Line spacing is 1.5, and the font is 12 point Times New Roman except for tables and figures

2 Methods					**1 Method**				
	%	**Pages**	**Words**	**Months**		%	**Pages**	**Words**	**Months**
Intro	6.5%	10	3235	2	Intro	6.3%	10	3100	2
Lit review	32.6%	52	16,174	8	Lit review	32.3%	52	16,025	8
Method 1	10.9%	17	5391	3	Method 1	18.8%	30	9300	5
Method 2	17.4%	28	8626	4	–	0.0%	0	0	0
Analysis	19.6%	31	9704	5	Analysis	19.2%	31	9538	5
Conclusions	13.0%	21	6470	3	Conclusions	13.1%	21	6486	3
Totals		**160**	49,600	**24**			**160**	49,600	**24**

Table 2 Topics for a final seminar presentation at the end of the first workshop

1. Title of thesis
2. Agenda (this slide lists all the following points)
3. Research problem
4. Parent theory 1 (covers about 4 or 5 relevant themes in the theory)
5. Parent theory 2 (covers about 4 or 5 relevant themes in the theory)
6. The conceptual framework of a solution to the research problem
7. Research issues/questions based on the conceptual framework that will guide data collection and analysis
8. Methodology (paradigm, justification, stages of data collection, and data analysis)
9. Ethical considerations
10. Schedule (each chapter's pages and months taken)
11. Planned contributions to theory and practice

Manual (American Psychological Association 2015), just as most social science doctoral candidates do.

As well as style, how to cite and reference sources must be carefully taught to the candidate. The APA citing and referencing format may be appropriate if the candidate uses modern bibliographic software like Mendeley or EndNote with their streamlined processes for building a list of references.

Supervision, Examination, and Publication

Supervision

Supervision of our niche degree thesis is hard work. Thus the relationship between supervisor and candidate changes over time (Jasman 2012). Coaching a sports person is an analogy to this gradually changing process (McCarthy 2012). A coach must first teach the rules and basic techniques of the sport to the beginner and then use positive reinforcement, while the beginner develops their own individual style while keeping to those established rules and techniques. The established rules and techniques are the structure, paradigm, and methodology matters noted above, as is the thesis structure and style requirements (Perry 2013). An introductory 1- or 2-week workshop would be the minimum to teach these rules and how to use Microsoft Word's Citations and Bibliography facility or use software like Mendeley or EndNote and use Google Scholar and a library database like EBSCOhost. (Workshop materials like PowerPoint slides, handouts and example theses are available from the first author.) At the conclusion of the workshop, the candidate should make a 20-min presentation to peers and supervisors about their tentative plans, with slides covering the points in Table 2 that follow example slides given to them.

And, by the end of the workshop, each supervisor and their candidate(s) will agree on the version of MicrosoftOffice Word they will use, their citation standard and software, their style standard, their acknowledgment of receipt of emails straightway, the period

that the supervisor will need to make Track Changes and Comments on drafts sent by the candidate, and exactly what the candidate will do with those Track Changes and Comments. The candidates will then be in a position to start writing their research proposal. The thesis itself can then be gone through chapter by chapter, with supervisor agreeing that the *draft* chapter is a suitable, tentative base for progressing to the next chapter. Each chapter and its supervisor's approval could be called "course work" based on Perry (2013) and examples theses that are studied by both the candidate and the supervisor, if such coursework was necessary for accreditation of the degree.

Supervision of career-focussed managers and professionals (who are working full time) is likely to take place in distance mode. Hence the candidate's relationship with their supervisors is central to progression in their doctoral program (Erwee and Albion 2011). So supervisors often need to initiate contact with the candidates (James and Baldwin 1999), especially in the early part of the doctoral program and/or if they have not been heard from them for a month (Erwee and Albion 2011). The presence of exemplar theses noted above will be especially helpful to these external candidates who cannot have as many interactions with their supervisor as on-campus candidates have. But they must know that they can cite only those sources they themselves (or their supervisor?) have seen in full or in its abstract; and they must not plagiarize the exemplars. One hindrance to speedy supervision feedback may be the need for a supervisor to teach candidates three core elements of writing: basic grammar like using the active voice and not using a "dangling this," citing and referencing sources, and core style issues like the use of a theme sentence for each paragraph. To ensure these grammar lessons are incorporated into the thesis usually requires the use of a speedy, outside proof-reader service. By the way, if all supervisors follow the standard structure and style suggested above, supervisors can easily work in a panel or easily take over the supervision of a thesis if another supervisor becomes sick or takes leave. Having inexperienced supervisors work as virtual "apprentice" supervisors with experienced masters could also be useful.

Examination

Despite some standard thesis examination guidelines having been established by institutions (Sarros et al. 2005), examination of theses by individual examiners is known to be an extraordinarily haphazard process that can delay completion. For example, only about one third of examiners take the criteria into account in their assessment of a thesis (Mullins and Kiley 2002). For another example of research into the examination process, Nightingale (1992, p. 169) found the examiners' "criteria remain generalised and difficult to interpret". And Johnston (1997, p. 346) found "inconsistencies and variations in examiners' reports." As well, Mullins and Kiley (2002, p. 370) conclude their study: "Nor do we have a clear understanding of how examiners undertake the assessment process, what it is they believe themselves to be doing, and why they undertake the time-consuming and stressful task." In brief, a "mad and bad" examiner should not be allowed to delay the timely graduation of a niche candidate (Kiley 2009, p. 889).

So, in our niche program, the carefully selected, potential *examiners* should be sent the guidelines that the candidate has followed and asked if they agree with them (and possibly an electronic copy of an exemplar thesis) to ensure alignment of their and the institution's expectations. For example, which of the several definitions of a "contribution" is used in the thesis should be made clear (Phillips 1992), and how many pages or words should be in the thesis from the start of Chap. 1 to the end of Chap. 5. As well as assenting to these guidelines, the potential examiners should be asked to confirm that they have already examined at least *five* theses, say, because examiners are given little training and it is common knowledge that inexperienced examiners should be avoided – "There was virtually unanimous agreement that inexperienced examiners need to be avoided at all costs..." (Mullins and Kiley 2002, p. 374). (How academics can examine their first five theses is a mystery that can be solved elsewhere.) After the examination, each examiner's demands of a candidate should be first considered by a committee of the institution to assess their appropriateness to the goals and values of the institution's degree, before they are passed onto the candidate and their supervisor. In brief, the whole examination process of a niche thesis must be suitable. (Many of the steps involved are described in the checklists in Office of Teaching and Learning (2013, pp. 89–98).)

Publication

Few career-focussed managers and professionals completing the niche doctorate will have the time to write conference paper or scholarly articles in academic journals after they graduate. (Anecdotally, it seems that only about 5 or 10% of all graduates write an article about their doctoral research because they are too busy advancing their professional career to do so, and our niche degree graduates would rarely be among them. Indeed, it appears that only graduates who are consultants want to write articles that get published in industry journals.) So the supervisor will have to write the first draft (and possibly the other drafts) of an article about the thesis' research. The article about its mid-range problem is likely to go into a B-class journal rather than a top-tier A-class journal because A-class journals are not very context-sensitive – as the Editor of an A journal puts it: "Just because a particular phenomenon has not been examined in a particular venue (such as a specific industry or country) is not a good reason to do a study" (Stewart 2002, p. 4). In contrast, the venue/context/setting of a management problem can be critical to its relevance to practice.

Conclusion

In summary, the design of an effective and efficient, timely doctorate for career-focussed managers and professionals involves a research degree that conducts research within the realism paradigm using the case research methodology. It often follows a standard thesis structure that allows the use of exemplar theses to guide a candidate, uses an established style manual and referencing conventions, and has

appropriate supervision, examination, and publication processes. In conclusion, these design principles accommodate the needs of a career-focussed manager while maintaining the high standards of a doctorate in Australia.

References

Abraham, S. 2012. *Work-applied learning for change*. Adelaide: AIB Publications.

American Psychological Association. 2015. *Publication manual of the American Psychological Association*. 6th ed. Washington, DC: American Psychological Association. http://www.apastyle.org/manual/index.aspx. Accessed 7 Apr 2016.

Australian Qualifications Framework. 2013. *Australian qualifications framework.* http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf. Accessed 18 Apr 2016.

Colebatch, H. 2002. Through a glass darkly: Policy development on higher degree completions in Australia. *Journal of Higher Education Policy and Management* 24 (1): 27–35.

Costley, C., and S. Lester. 2012. Work-based doctorates: Professional extension at the highest levels. *Studies in Higher Education* 37 (3): 257–269. https://doi.org/10.1080/03075079.2010.503344. Accessed 16 Mar 2016.

Clerke, T., and A. Lee. 2008. Mainstreaming the doctoral research portfolio?. Refereed Papers. (It is available on scholar Google for anyone who wants to get it).

Davis, H., T. Evans, and C. Hickey. 2006. A knowledge-based economy landscape: Implications for tertiary education and research training in Australia. *Journal of Higher Education Policy and Management* 28 (3): 231–244. https://doi.org/10.1080/13600800600979983. Accessed 10 Mar 2016.

Erwee, R. 2004. Professional doctorates and DBAs in Australia: Dilemmas and opportunities to innovate. *International Journal of Organisational Behaviour* 7 (3): 394–400.

Erwee, R., and P. Albion. 2011. Preferences of external doctoral students and supervisors for new communication media. *International Journal of Organisational Behaviour* 16 (1): 30–39.

Flyvberg, B. 2006. Five misunderstandings about case-study research. *Qualitative Inquiry* 12 (1): 219–245.

Gaskell, G. 2000. Individual and group interviewing. In *Qualitative research in text, image and sound*, ed. M. Bauer and G. Gaskell, 38–56. London: Sage.

Godfrey, P.C., and C.W. Hill. 1995. The problem of unobservables in strategic management research. *Strategic Management Journal* 16 (7): 519–533.

Gould, J. 2015. How to build a better PhD: There are too many PhD students for too few academic jobs – But with imagination, the problem could be solved. *Nature* 528: 7589.

Grabowski, T.J., and J. Miller. 2015. Business professional doctoral programs: Student motivations, educational process and graduate career outcomes. *International Journal of Doctoral Studies* 10: 257.

Guba, E., and Y. Lincoln. 2005. Paradigmatic controversies, contradictions, and emerging confluence. In *The sage handbook of qualitative research*, ed. N. Denzin and Y. Lincoln, 105–117. Thousand Oaks: Sage.

Gummesson, E. 2000. *Qualitative methods in management research*. 2nd ed. Thousand Oaks: Sage.

Healy, M., and C. Perry. 2000. Comprehensive criteria to judge the validity and reliability of qualitative research within the realism paradigm. *Qualitative Market Research* 3 (3): 118–126.

Herr, K., and G.L. Anderson. 2005. *The action research dissertation: A guide for students and faculty.* Thousand Oaks: Sage.

Huff, A. 1999. *Writing for scholarly publication*. Thousand Oaks: Sage.

James, R., and G. Baldwin. 1999. *Eleven practices of effective postgraduate supervisors*. Melbourne: Centre for the Study of Higher Education, University of Melbourne. https://cshe.unimelb.edu.au/resources_teach/teaching_in_practice/docs/11practices.pdf.

Jasman, A. 2012. From behind closed doors: Making the tacit explicit in research supervision practice. *International Journal of Organisational Behaviour* 17 (1): 28–41.
Johnston, S. 1997. Examining the examiners: an analysis of examiners' reports on doctoral theses. *Studies in higher education* 22 (3): 333–347.
Kiley, M. 2009. 'You don't want a smart Alec': Selecting examiners to assess doctoral dissertations. *Studies in Higher Education* 34 (8): 889–903. https://doi.org/10.1080/03075070802713112.
King, N., and C. Horrocks. 2010. *Interviews in qualitative research*. Los Angeles: Sage.
Kot, F.C., and D.D. Hendel. 2012. Emergence and growth of professional doctorates in the United States, United Kingdom, Canada and Australia: A comparative analysis. *Studies in Higher Education* 37 (3): 345–364.
Malfoya, J., and L. Yatseb. 2003. Knowledge in action: Doctoral programmes forging new identities. *Journal of Higher Education Policy and Management* 25: 119–129.
Maxwell, T. 2003. From first to second generation professional doctorate. *Studies in Higher Education* 28 (3): 279–291.
McCarthy, G. 2012. The case for coaching as an approach to addressing challenges in doctoral supervision. *International Journal of Organisational Behaviour* 17 (1): 15–27.
Miller, P. 2010. Global discipline confusion in management and business related doctorate programmes. *Review of International Comparative Management* 11 (4): 623–639.
Moore, A. 2015. *Enhancing personal and organisational capability by developing expertise in cultural change management*. Toowoomba: University of Southern Queensland.
Mullins, G., and M. Kiley. 2002. "It's a PhD, not a Nobel Prize": How experienced examiners assess research theses. *Studies in Higher Education* 27 (4): 369–386.
Murray, R. 2002. *How to write a thesis*. 2nd ed. Buckingham: Open University Press.
Nightingale, P. 1992. Initiation into research through writing. In *Starting research – Supervision and training*, ed. O. Zuber-Skerritt. Brisbane: Tertiary Education Institute, University of Queensland.
O'Brien, J., T. Drnenvich, and C. Armstrong. 2010. Does business school research add economic value for students? *The Academy of Management Learning and Education* 9 (4): 638–651.
Office of Teaching and Learning. 2013. *Supervision of higher degree by research students: Supervisor resource book*. Canberra: Department of Education. http://researchsupervisiontoolkit.com/page/rst-ebook. Accessed 3 Apr 2016.
Office of Teaching and Learning. 2015. *Supervising the Doctor of Business Administration (DBA) thesis: Addressing the needs of candidates and supervisors*. Canberra: Department of Education. http://www.olt.gov.au/resources/good-practice?text=supervision. Accessed 3 Apr 2016.
Ozcan, P., and K.M. Eisenhardt. 2009. Origin of alliance portfolios: entrepreneurs, network strategies, and firm performance. *Academy of Management Journal* 52 (2): 246–279.
Park, C. 2005. New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management* 27 (2): 189–207. https://doi.org/10.1080/13600800500 120068.
Pearce, J.L., and L. Huang. 2012. The decreasing value of our research to management education. *The Academy of Management Learning and Education* 11 (2): 247–262.
Perry, C. 1998. A structured approach for presenting theses. *Australasian Marketing Journal* 6 (1): 63–85.
Perry, C. 2011. A structured approach to the journey of doctoral research. *International Journal of Organisational Behaviour* 16 (1): 1–12. http://www.usq.edu.au/business-law/research/ijob/articles.
Perry, C. 2013. *Efficient and effective research*. Adelaide: ABE.
Perry, C., A. Riege, and L. Brown. 1999. Realism's role among scientific paradigms in marketing research. *Irish Marketing Review* 12 (2): 16–23.
Perry, C., and J. Morelli. 2017. A manager/researcher can learn about professional practices in their workplace by using case research. *Journal of Workplace Learning* 29 (1): 49–64.
Phillips, E. 1992. The PhD: Assessing quality at different stages of its development. In *Starting research – Supervision and training*, ed. O. Zuber-Skerritt, 119–136. Brisbane: Tertiary Education Institute, University of Queensland.

Phillips, E., and D. Pugh. 2000. *How to get a PhD*. 3rd ed. Buckingham: Open University Press.
Rao, S., and C. Perry. 2003. Convergent interviewing to build a theory in under-researched areas: Principles and an example investigation of internet usage in inter-firm relationships. *Qualitative Market Research* 6 (4): 236–247.
Rao, S., and C. Perry. 2007. Convergent interviewing: A starting methodology for an enterprise research program. In *Innovative methodologies in enterprise research*, ed. D. Hine and D. Carson. Northampton: Edward Elgar.
Sarros, J., R. Willis, and T. Hardie. 2004. The DBA in Australia and the Asia Pacific: Opportunities and challenges. *International Journal of Organisational Behaviour* 7 (8): 440–455.
Sarros, J., R. Willis, R. Fisher, and A. Storen. 2005. DBA examination procedures and protocols. *Journal of Higher Education Policy and Management* 27 (2): 151–172.
Stewart, D. 2002. Getting published: Reflections of an old editor. *Journal of Marketing* 66: 1–6.
Taylor, C., and G. Gibbs. 2010. How and what to code. www.onlineqda.hud.ac.uk/Intro_QDA/how_what_to_code.php. Accessed 29 Mar 2015.
Wildy, H., S. Peden, and K. Chan. 2015. The rise of professional doctorates: Case studies of the Doctorate in Education in China, Iceland and Australia. *Studies in Higher Education* 40 (5): 761–774. https://doi.org/10.1080/03075079.2013.842968.
Yin, R. 2014. *Case study research: Design and methods*. Thousand Oaks: Sage.
Zuber-Skerritt, O. 2007. Professional doctoral theses by explication as professional management development. *Quality Assurance in Education* 15 (1): 20.
Zuber-Skerritt, O. 2011. Management education for organization development. In *Action leadership*, ed. O. Zuber-Skerritt, 139–186. Dordrecht: Springer. https://doi.org/10.1007/978-90-481-3935-4_6.
Zuber-Skerritt, O., and C. Perry. 2002. Action research within organisations and university thesis writing. *The Learning Organization* 9 (4): 171–179. https://doi.org/10.1108/09696470210428895.
Zusman, A. 2013. Degrees of change: How new kinds of professional doctorates are changing higher education institutions. Research and occasional paper series: CSHE. 8.13. Center for Studies in Higher Education. http://eric.ed.gov/?id=ED545185.

Meeting and Managing the Challenges in Engineering Management Doctoral Supervision

21

David Thorpe

Contents

Abstract

Professional engineers have a significant role in developing and managing critical infrastructure and systems that support society. A significant proportion of these professionals work as managers of projects and processes, many of them complex, over the course of their career. Such work requires the use of both technical and managerial skills. Because of this dual role of the engineer who is also a manager, research in engineering management can be quite complex and will require knowledge and skills in both of the engineering and management discipline areas. Supervisors of this research therefore not only require good knowledge of both engineering and managerial principles but also good educational skills, an ability to work in a supervisory team, and a practical approach to guiding and aiding research. Examples of engineering management practice are reviewed and linked to potential engineering management research and the resulting research journey. Challenges in this journey and how they can be

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addressed through good supervisory practice and the use of good research approaches like reflective learning are discussed. It is concluded that development by supervisors of good supervisory skills, a supportive supervisory style, recognition of the complexity of the research task, a good relationship between supervisor and research candidate with good communication between them, and the encouragement by the supervisor of good research practices all have a significant role in developing and encouraging engineering management doctoral candidates in the successful and positive achievement of their goals.

Keywords
Supervision · Doctoral · Research · Engineering · Management

Introduction

While they are well educated and trained in the knowledge and skills of engineering design and development, a significant proportion of professional engineers also function as managers of significant projects and processes, many of them complex, over the course of their career. The tasks that they perform in this role are often undertaken in uncertain environments (Trevalyn 2014, pp. 321–330). Engineers are also likely to have a significant involvement in the processes of planning and managing projects and dealing with the business-technical divide, which among other items are significant components of project success (Merrow 2011, pp. 332–340).

Research in engineering management seeks to develop an improved appreciation of this combined role of technical expert (engineer) and manager and to gain a better understanding of the issues involved in undertaking engineering projects and processes, with a view to improving them. Thus, while engineering management doctoral research has similarities with that of other disciplines, there are a number of differences. For example, the topics addressed in engineering management research are likely to have both an engineering component with a physical science foundation and a managerial component that relies more on the social sciences, both of which require to be integrated in the same research output document. Thus such research will quite often be transdisciplinary in nature (Wickson et al. 2006) and at the very least multidisciplinary. This requirement to integrate a number of areas of research is likely to produce a tension within the researcher from the point of view of the objectives of the research project and the research methodologies employed. Conversely, the challenge provided by the complexities and issues in this research can give engineering management doctoral candidates and their supervisors a rewarding research journey, often with considerable learnings for both supervisor and candidate.

A further challenge in engineering doctoral research arises from the types of topics undertaken in the research, such as the management of projects (which can be quiet wide ranging in type), assets, risk and innovation, and current professional engineering issues such as sustainability. Such fields have a diverse range of technical engineering and managerial components and can be quite complex.

Because of this diversity, the supervision of research in these areas is usually best undertaken by a supervisory team consisting of two or more supervisors rather than a single main supervisor. For example, a principal supervisor may provide overall supervision and engineering management knowledge to the research, and other supervisors may provide detailed technical input.

A number of engineering management doctoral candidates tend to have at least some work experience, plus good personal knowledge of their field of research, and will therefore have a good understanding, before they commence formal research, of the problems in their area of study. They will as a result bring to the research positive attributes like considerable knowledge of their field and well-developed professional skills. The supervision approach for these researchers is therefore likely to be quite different from the more directive style that may be better suited to research candidates with minimal industry experience.

Given the tensions resulting from the multidisciplinary nature of engineering management doctorate research, one of the tasks of the engineering management doctoral research supervisory team is likely to be to aid researchers to manage the differences between what is often a quite focused approach for the technical engineering component of the research and the potentially less well-defined path for its managerial component. In this pursuit of knowledge, there will be challenges in integrating knowledge and expectations from the engineering and management disciplines and paradoxes to resolve that arise from developing the knowledge required to understand phenomena in two or more disciplines.

This chapter discusses these challenges, the tensions that arise from them, and approaches that may be used by supervisors to aid engineering management researchers to have a satisfying doctoral research journey. It achieves these objectives through firstly exploring the role of the engineer and selected areas of engineering management practice, which in turn link to form potential engineering management research topic areas, and then reviewing the engineering management doctoral journey, the challenges in this journey, and approaches for meeting these challenges. A discussion and conclusion complete the chapter.

Figure 1 shows this process set out in a visual conceptual framework. The context of the discussion is set in the management of engineering projects and processes.

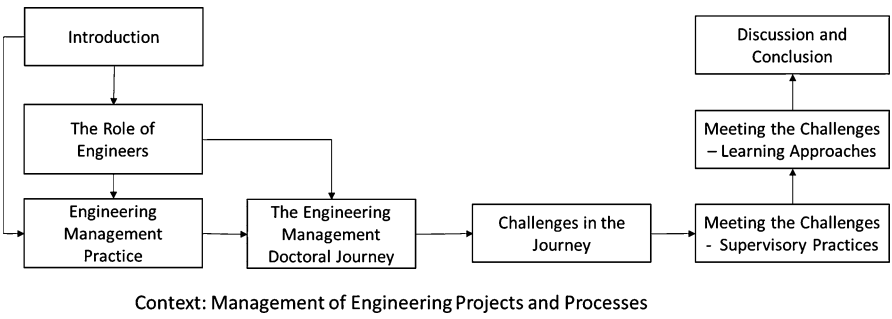

Fig. 1 Conceptual framework for chapter (Source: Author)

The first step is to determine the engineering management doctoral research journey through gaining an understanding of the role of the engineer in the workplace and discussing a number of engineering practice areas that are likely to influence research. The other main part of this conceptual framework is to review the challenges in the research candidate's doctoral journey and discuss how they can best be met through good supervisory practice and the use of good learning approaches such as those based om reflective practice, with the aim of achieving a sense of satisfaction for both the candidate and the supervisory team of completing a rewarding, successful, and worthwhile research journey.

The Role of Engineers in Society

In common with other graduates, graduate engineers possess a number of professional skills or the skills required succeed in professional practice. These skills include the knowledge and skills relating to their discipline, and the ability to apply what they have learned to the workplace, including generic (or transferable) skills and other attributes like motivation, confidence, self-management, ethical conduct, meeting deadlines, relating to other people, and showing initiative (Crebert et al. 2011). In particular, graduate professional engineers are expected to primarily possess a sound theoretical knowledge and skill base, be able to apply engineering methods, techniques, synthesis, and design processes, manage engineering projects, and possess a range of professional and personal attributes (Engineers Australia 2013).

As graduate engineers undertake practice and in time become mature professional engineers, they are required to take responsibility for engineering projects and programs, including the reliable functioning of all components of the technical engineering system and the context in which it functions. They are also required to understand the requirements of clients, stakeholders, and society as a whole and to optimize social, environmental, and economic outcomes over the life of engineering products or programs, including interacting with other disciplines, professions, and people and ensuring that the engineering contribution is integrated into the totality of the undertaking. They are also expected to ensure that policies, costs, risks, and limitations are properly understood and are responsible for bringing knowledge from multiple sources to develop solutions to complex problems and issues, for the integration of both technical and non-technical considerations, and for managing both risk and sustainability issues. They are also required to be innovators and should have the capacity, as professionals, to break new ground in an informed, responsible, and sustainable way (Engineers Australia 2013). In addition, experienced engineers who have achieved the Chartered Professional Engineer status are expected to practice independently or unsupervised (Engineers Australia 2012).

To achieve these objectives and other professional practice requirements, Chartered Professional Engineers are expected to meet 16 elements of competency, grouped under the headings of personal commitment, obligation to community, value in the workplace, and technical proficiency (Engineers Australia 2012).

All engineers in Australia are also required to adhere to a Code of Ethics (Engineers Australia 2010) which defines the values and principles that shape the decisions made in engineering practice. In summary, the Code of Ethics requires professional engineers to demonstrate integrity, practice competently, exercise leadership, and promote sustainability.

In summary, engineers from graduation onward are required to possess not only the technical skills to undertake professional work in their discipline but also a number of managerial, interpersonal, and other transferable skills. They are also expected to possess project management skills. As they become experienced, engineers are expected to further develop these skills and to practice independently, manage risks, manage sustainability, understand costing issues, integrate technical and non-technical matters related to their work, and be innovative.

These requirements, along with a desire for success in their field, would be expected to lead for a desire for professional engineers to improve their knowledge and skills in both managerial and technical fields. This desire would in turn be expected to underpin an interest by them in not only understanding and better applying their particular field of engineering and its management but also improving their skills in these areas through research.

Engineering Management Practice

Given the above requirements, some of the areas in which engineering managers might be expected to practice include the management, in an engineering context, of projects, risk, sustainability, engineering assets, and innovation management. The discussion that follows explores these five areas of engineering management practice, as examples of the types of fields in which engineers are engaged. There are many other areas. This discussion excludes more general management topics like interpersonal skills, team management, political skills, ethics, and similar areas, the research of which is more properly that of business management and related disciplines.

The management of projects is a key engineering management skill, which is required in engineers from graduation as a professional engineer onward. It is important to manage projects successfully in an increasingly challenging environment, particularly when dealing with larger and more complex projects. Areas in which projects can fail include failure for project results to be delivered on time or within budget and with predicted performance, safety, or reliability (Trevalyn 2014, p. 328). Such failure is not uncommon. For example, Armstrong (2015) interviewed, from the point of view of maturity in managing project dynamics such as power, responsibility, and control, executives from 100 organizations that carried out considerable construction activity and found that 53% of project owners experienced one or more projects in the previous year that failed. In addition, less than a third of projects in the previous 3 years were delivered within 10% of budget, and only a quarter were completed within 10% of their original deadlines. Projects also fail in other areas, such as those that lead to environmental tragedies and loss of life.

On the other hand, well-managed projects have the potential to succeed (Merrow 2011, pp. 333–340).

Two of the areas in which engineers are expected to be engaged at a professional level are risk management and sustainability management. As engineers are expected to manage projects and processes in uncertain environments, the increasing complexity of such environments has a significant impact on the risk of undertaking projects in them. The engineer's task is to bring predictability through managing risk, including that resulting from human behavior, through good management (Trevalyn 2014, pp. 321–330). Such risk is managed using established methods like those in *Risk Management – Principles and Guidelines* (Standards Australia 2009). The risk management architecture of this standard is based on a set of principles, an iterative framework based on a continual improvement framework, and an iterative process, within an environment of communication and consultation, of establishing the risk context; identifying, assessing, and evaluating the risk; treating the risk; and ongoing monitoring and review of the risk (Standards Australia 2013). Risk can be positive as well as negative.

Sustainable development may be defined as meeting the needs of the present while enabling those who follow us to meet their own needs (Brundtland 1987) which is based on a convergence between economic development, social equity, and environmental protection (Drexhage and Murphy 2010, p. 2). Economic development tends to be measured on a basis jobs and income; social equity equates to people living together; and environmental (or natural) protection means the protection of living things, resources, and life support systems (United Nations Educational, Scientific and Cultural Organization 2010). Sustainable practice is increasingly significant for the engineering profession and is supported by engineering professional organizations. As a result, sustainability is widely taught by universities to engineering students (Valdes-Vasquez and Klotz 2011; Desha et al. 2013; Watson et al. 2013).

Sustainability is a developing concept. Over time, its dimensions have been expanded from its traditional economic development, social equity, and environmental protection pillars. For example, the United Nations Educational, Scientific and Cultural Organization (2010) has added to these three pillars (or dimensions of sustainability) a fourth political dimension, or politics, policy, and decision-making. A further development with respect to sustainability is the concept of resilience or "the capacity of a system to absorb disturbance and reorganise so as to retain essentially the same function, structure and feedbacks – to have the same identity" (Walker and Salt 2012, p. 3). The Paris Agreement (United Nations 2015), which aims to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, and comes into force in 2020, adds further strength to the importance of sustainable practices.

A related area is asset management, which is defined by the International Standard for Asset Management (Standards Australia 2014) as "coordinated activity of an organisation to realise value from assets." The Standard observes

that it is desirable for organizations to manage risk and opportunity to achieve a desired balance of effective control and governance of assets (Standards Australia 2014). Asset management has a life cycle analysis focus and presents challenges in maintenance, preservation, innovation, environmental sustainability, and funding. It accordingly requires an integrated framework for good management (Uddin et al. 2013, pp. 20–32). Other considerations in good asset management are close consideration of stakeholder requirements and a strategic approach to its management.

Finally, good engineers tend to be innovators. One definition of innovation in this sense is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers 2003, p. 12). In the definition, an innovation is not just new knowledge and may be expressed in terms of knowledge, persuasion, or a decision to adopt (Rogers 2003, p. 12). Hence an innovation may be considered as the application of a new idea rather than the idea itself. The adoption of an innovation requires a decision process, which can be considered in terms of the five stages of knowledge, persuasion, decision, implementation, and adoption (Rogers 2003, pp. 155–218). It has been observed that innovation is a contributor to the success of engineering projects, including construction (Fernando et al. 2015) and systems development.

The Engineering Management Doctoral Research Journey

It would be expected that engineering management research would be based on problems in engineering management practice areas, such as those discussed above. Therefore, some of the potential areas of engineering management research might include project management, risk management, sustainability management, asset management, and innovation management. Other engineering management topic areas might include, but are not confined to, the management of engineering processes, manufacturing, innovative use of materials, and engineering systems development. As an example of this diversity in topics, the author is responsible for supervising Doctor of Philosophy candidates who are undertaking research in topics like construction productivity, construction innovation, energy efficiency of buildings, use of energy-efficient materials, and project management and has similarly either supervised or supervises engineering professional doctorate candidates in topics like innovation management, investigation of alternative approaches for compressing liquefied natural gas, research risk management, and asset management.

With respect to potential research programs for engineering management research, the University of Southern Queensland, as an example, offers candidates for engineering doctoral research two options. One of these options is the traditional Doctor of Philosophy (University of Southern Queensland 2016a). The second is the Doctor of Professional Engineering (University of Southern Queensland 2016b), a professional doctorate that is aimed at engineering professionals looking to upgrade their skills, knowledge, and qualifications through a combination of

coursework and research project work, in a program consisting of the equivalent of 1 full-time year of coursework and 2 full-time years of original research. Both doctorates meet the Australian Qualifications Framework Level 10 (Doctoral Degree) requirements, which aims at qualifying individuals who apply a substantial body of knowledge to research, investigate, and develop new knowledge, in one or more fields of investigation, scholarship, or professional practice (Department of Education and Training 2013). There is also a Master of Engineering (Research) (University of Southern Queensland 2016c), which meets the Australian Qualifications Framework Level 9 (master's degree) requirements and which is entered by candidates who have demonstrated a high level of academic performance at the undergraduate level or demonstrate though undertaking their occupation or by other means. It can articulate into either of the doctoral programs.

The Doctor of Philosophy may be taken by full-time candidates or part-time candidates. The Doctor of Professional Engineering is normally taken by part-time candidates. Either program is suitable for engineering management research. The research journey will normally take the equivalent of six semesters of full-time study (normally 3 years of full-time study or 6 years of part-time study) for the doctorate programs and three semesters full-time or six semesters part-time for the Master of Engineering (Research).

The research journey normally commences with the acceptance by a university or other research institution of a research proposal, which usually has been discussed between the research degree candidate and the proposed supervisory team prior to submission. For engineering management topics, this proposal will typically focus on a problem in engineering practice. The topics selected for research tend to reflect the fields of engineering management, such as those discussed in the previous section. Normally, the candidates have had a number of years in either working as professional engineers or in occupations like university lecturing.

In common with other research, the student, at the commencement of the research project, would undertake a detailed literature review, in order to identify gaps in knowledge and assist the researcher to develop detailed research questions. The outcomes of this process would normally be accompanied by an appreciation of the outcomes and significance of the research and a conceptual framework for undertaking it. The next step is the development of a research methodology, with key milestones, to address the research questions. At this stage, the research student will normally undertake a Confirmation of Candidature, which is taken at the equivalent of 1 full-time year of study for the Doctor of Philosophy, 1.25 years for the Doctor of Professional Engineering, and 0.5 years equivalent full-time study for the Master of Engineering (Research) (University of Southern Queensland 2017).

Following a successful Confirmation of Candidature, the research student is then in a position to obtain necessary ethical and other approvals and gather data, which is followed by analysis, verification, and discussion of results and the development of any recommendations and the conclusion. The submission for examination of the research dissertation or thesis, which ideally would be progressively written during the research, is the final task in the research journey.

Challenges in the Engineering Management Doctoral Journey

In common with other research programs, doctoral research candidates in engineering management face a long and difficult journey that requires the candidate to work in isolation. At the same time, there is additional complexity imposed by the requirement to combine studies in the two fields of engineering and management. Candidates for this research therefore face a range of difficulties in a number of aspects of their studies, including selecting a topic, deciding the research topic, supervision, writing, and examination. Thus there is typically a high rate of non-completion of doctoral studies in many universities.

This difference in topics, the mode of study of candidates (full-time on-campus, part-time on-campus, external studies), the background of the candidates (e.g., international students with minimum work experience, domestic graduate engineers, staff from universities, professional engineers), and the types of research programs they undertake (e.g., Doctor of Philosophy, Doctor of Professional Engineering) have the potential to result in a quite different approach to the supervision of the research of each degree candidate.

For example, there are likely to be different approaches used to achieve a research result between the Professional Doctorate, research for which tends to take a broader view of the topic, and the Doctor of Philosophy. Thus there may be a different emphasis between these programs in both the research undertaken and the process used to achieve the research goal. A candidate for a Professional Doctorate further differs from the Doctor of Philosophy candidate by usually being required to complete the coursework component of their program (or gaining exemption from at least part of it) before commencing research and undertaking research that may be broader than traditional doctorate research, in order to better meet industry requirements.

The approach taken by the supervisory team to the research can also impact on the outcome of the research. Lee (2008) proposes that this approach can be influenced by the supervisors' concept of research supervision and the supervisor's own experience as a doctoral student. She identifies five main approaches to supervision, which are:

1. Functional, which has a project management focus and which is claimed to fit most closely with the professional role of the academic
2. Enculturation, in which students are encouraged to become a member of an academic discipline
3. Critical thinking, which encourages students to question and analyze their work
4. Emancipation, which facilitates students to question and develop themselves
5. Developing a quality relationship, where emotional intelligence and flexibility play a significant role in aiding the student to complete their research and enthuse, inspire, and care for students (Lee 2008)

It has been observed that each of these approaches provides a different understanding of the student-supervisor relationship and hence of the support and feedback in that relationship (de Lange et al. 2011).

It has been proposed that one issue with engineering doctoral research students is a likely difficulty in setting distinct boundaries between education and research. The reason given for the potential for this difficulty to occur is that over the research journey, engineering doctoral students evolve gradually to become independent researchers as a result of guidance from supervisors as well as the testing in practice of the knowledge acquired in the research, leading in turn to supervisory challenges in theorizing and theoretical modeling as an outcome of the research. Another issue that has gained increased significance in engineering doctoral research is writing and in particular the requirement to enhance the writing skills of non-native English-speaking students. There is also an increased industry focus to research (which is an important matter for engineering management research). It is proposed that supervisors address these and other challenges by adopting the role not only of mentor but also of negotiator and translator and developing links with industry (Kourousis 2013).

A final challenge in the research engineering management journey is the multidisciplinary (and often transdisciplinary) nature of the research. One of its characteristics is that it is aimed at solving problems that are complex and multidimensional, and in particular problems at the interface between human and natural systems, such as problems related to sustainability. An example might be the development of a life cycle approach to manage engineering infrastructure assets, each of which is subject to the need to meet certain requirements that meet stakeholder issues, in a constantly varying world. It is generally agreed that there is no one methodology for solving transdisciplinary problems. However, it has been proposed that the key themes for their solution include problem focus, evolving methodology and collaboration. Researchers in such areas (such as in many engineering management problems) may require to consider factors like the integration of knowledge from a range of disciplines, be engaged with and reflect on the problem they are addressing, and resolve paradoxes that arise (Wicksonet al. 2006).

The differing backgrounds of postgraduate engineering management research students, the types of research programs in which they enroll, their varying modes of study, the impact of the style of supervision on the research, the issues that arise in the research journey, and the multidisciplinary nature of engineering management research have the potential to present a number of challenges to both researchers and supervisors and give rise to tensions within the students. These challenges require addressing if the students are to have a satisfying and rewarding research journey.

Meeting the Challenges in the Research Journey Through Good Supervisory Practices

The challenges in the engineering management research journey are likely to arise from a range of sources, which can give rise to tensions between engineering management doctoral candidates and their supervisors, as discussed by authors like Kourousis (2013), and within them as a result of the complex nature of the

requirement for them to simultaneously understand and resolve issues in both of the engineering and management fields. The research discussed above indicates that there are likely to be two main approaches to addressing these challenges. These approaches are improving supervisory practices and the encouragement of the use of good learning approaches by the student. The supervisory approaches are considered first.

By its nature, research is student centered. Thus, Tyler (1949) (as cited in Biggs 2001), stated that learning takes place through the active behavior of the student, it being whatever the student does rather than what the teacher does. In this role, the job of the teacher is to support students to achieve their goals (Biggs 2001). A possible extension of this approach to research supervision might be to a role of the supervisor as a guide who supports research students in their achievement of success, rather than as a director.

One of the approaches that supervisors can use to facilitate good research is to undertake best research supervision practice. Some of these practices, as listed by James and Baldwin (1999) (as cited in Helfer and Drew 2013), include the following:

- Ensure an effective partnership for the project.
- Get to know students and carefully assess their needs.
- Establish reasonable, agreed expectations.
- Work with students to establish a strong conceptual structure and research plan.
- Encourage students to write early and often.
- Initiate regular contact and provide high-quality feedback.
- Get students involved in the life of the department.
- Inspire and motivate.
- Help if academic and personal crises arise.
- Take an active interest in students' future careers.
- Monitor the final production and presentation of the research.
  (James and Baldwin 1999, as cited in Helfer and Drew 2013)

These characteristics of supervision are likely to occur as a result of the encouragement of the critical thinking and development of a quality relationship supervisory approaches of Lee (2008). They would work in well with a recognition that the academic work and student research in engineering are dynamic processes (Heifer and Drew 2013).

While there may be no one "best practice" model of doctoral supervision, good postgraduate supervision does require a mixture of complex academic and interpersonal skills. Thus de Lange et al. (2011), in describing a cohort model of doctoral supervision, have found that supportive practice, reflective practice, and a community of practice can result in a supportive community. In construction management and engineering research, which is very much part of engineering management research, a framework of personal help to students (indirect research-related help such as providing contacts, equipment, and initial help with locating references and

direct research-related help such as critical analysis, help with methodologies and precise direction, and help with the management of the research project) was proposed and researched through a survey of doctoral students in this field in the United Kingdom. The main outcome of this research was that supervisors should be able to adopt flexible strategies that depend on the requirements of their individual students (Haksever and Manisali 2000).

In summary, if supervisors are to provide the best possible assistance to engineering management research students so that they have a satisfying research journey, they would start on the basis that no one best model meets the requirements of best practice in supervision. A first step might be to get to know the student and the student's interest in the research and be as supportive as possible. As part of this process, agreed expectations would be developed, and a research supervision approach, such as one or more of those proposed by Lee (2008), could be adopted. A schedule of regular meetings for students working on campus, or living within driving distance of the university, would be expected to considerably aid in developing a good supervisory relationship. For students unable to attend the campus regularly, the equivalent process would be establishing regular email and/or video conferences.

Ongoing support would take the form of regular consultation to discuss research issues, assist students with developing university and industry contacts, and provide assistance with the development of methodologies, obtaining ethics and other approvals, critical reflection on data gathering and analysis, and the development of conclusions. Review of thesis writing is also an important task.

Another approach to assist students have a satisfying research journey is to have more than one supervisor in a supervisory team. Supervisory teams allow the blending of the knowledge and skills required to develop the student and achieve a good result. A possible supervisory team would be made up of a principal supervisor and one or more associate supervisors who bring different skills and approaches to the research that complement those of the principal supervisor. Each supervisor in the team has input, coordinated by the principal supervisor (who has most contact with the student), into the research journey. The author has both led and been a member of supervisory teams and has noted positive outcomes from this process.

It is also important for research supervisors to both maintain and upgrade their supervisory skills. Regular training is an important component of this process. One way of aiding supervisor development is using a community of practice concept, managed by the members of that community. For example, the author's university has established a Research Supervision Community of Practice, which meets over lunch approximately once every 6 weeks. The agenda for this meeting focuses on fellowship, presentation by an expert in a particular area of domain expertise, and sharing between members of the group of their supervision practices, through a discussion forum, or similar activity, around a particular topic of interest. This approach not only develops research supervisors but also promotes collegiality between them through providing the opportunity for fellowship, delivering targeted training, and facilitating discussion.

Meeting the Challenges in the Research Journey Through Learning Approaches

One tool that researchers can use for resolving the tensions that arise in the engineering management research process is to reflect on the progress of their research and the issues they find during their research, on the way in how their preexisting background and frames of reference impact on their understanding of the research problem and its resolution and as required make changes to their research methodology and processes. A resulting challenge for the engineering management doctoral research supervisor is to assist the researcher in this process.

Encouraging reflective practice in researchers is founded on maintaining good and regular communication, aiding the researcher to reflect on the research and what it has achieved and develop the next research steps in a way that builds sustainable research and develops worthwhile outcomes. An extension of this approach is the experiential learning cycle of experiencing, observing, thinking, and doing (Kolb 1984; Kolb and Kolb 2009; Calpito 2012), which describes a cyclical process of learners having a concrete experience such as active engagement in research, undertaking reflective observation on that experience, theorizing their observations through abstract conceptualization, and engaging in active experimentation, which in turn leads to another concrete experience. This cycle is shown in Fig. 2.

Calpito (2012) observes that through experiential learning, learners learn how to learn and engage in a cycle that enables them to better understand concepts. Reflection also occurs in this process. In a research environment, such reflection

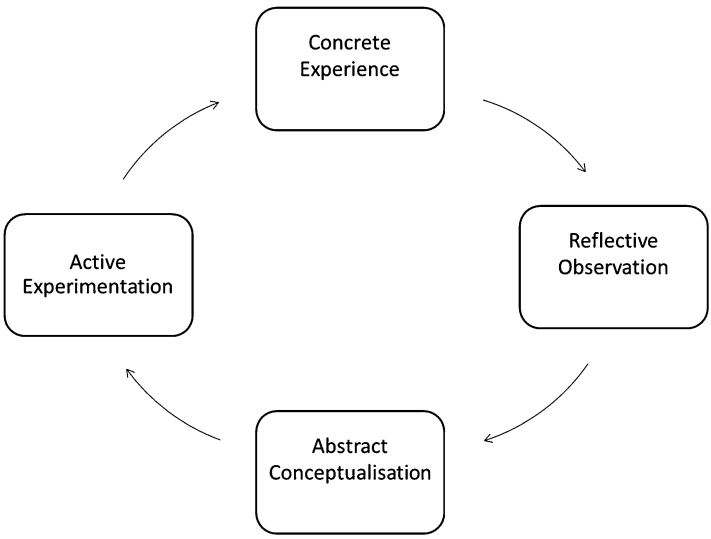

Fig. 2 The experiential learning cycle (After Kolb and Kolb 2009; Calpito 2012)

could consist of activities like reflective writing, creative summaries, and interaction with others.

An example application of experiential learning in research could commence with the researcher having a concrete experience as a result of obtaining a particular result in data analysis. This experience would be followed in turn by reflective observation on the result, understanding what caused the result through abstract conceptualization, finally modifying the research or data analysis, and again engaging in active experimentation. This approach is particularly suited to exploring the complex interactions in engineering management research, in which there are a large range of both the physical science-based variables of engineering and the social science-oriented variables of management processes.

A further development of the experiential learning concepts is embodied learning, which is a learning process that develops a relationship between the researcher and the research itself. It can be defined as "learning that joins body and mind in a physical and mental act of knowledge construction" (Nguyen and Larson 2015). Its concepts can be traced back to Dewey, as cited in Nguyen and Larson (2015), who observed that the locus of learning resides at the constantly evolving nexus of the body, mind, and experience. This method can be applied to physical, social-based, and spatial (e.g., mathematics) modes of learning.

Nguyen and Larson (2015) propose three conceptual elements of embodied learning – bodily and spatial awareness of sensation and movement, unification of mind/body in learning, and the body's role as sociocultural context. Successful embodied learning normally requires interdisciplinary collaboration, problem-posing instruction, and thoughtful learning space design (Nguyen and Larson 2015). Engineering management research, which tends to have interdisciplinary characteristics, would be expected to require a considerable cooperation, a problem-solving approach, and a well-designed research center that facilitates a good research culture. Such approaches are also found in good experiential learning (Kolb and Kolb 2009). Therefore, it is considered that a research environment that fosters an experiential learning environment that is enhanced through a focus on embodied learning principles has the potential to result, over time, in very good research outcomes and develop strong linkages between researcher and the research topic.

All activities in postgraduate research require activities – concrete experience, reflection, thought, experimentation, learning, revision, and further work. Researchers have the potential to learn from these experiences and in the process link the research process closely with their thinking. In turn, there is the potential for a synergy to develop between the researcher and the research topic. In a complex research project, this synergy has the potential to achieve a positive, satisfying research outcome.

Therefore, through encouraging the use of good reflective practices, particularly in complex research projects that span two or more disciplines, such as engineering management, a good research supervisor has a real role to play in encouraging the researcher to produce meaningful and original results.

Discussion and Conclusion

Supervisors of doctoral programs in engineering management require not only a good knowledge of both engineering and managerial principles but also good educational skills, an ability to work in a supervisory team, and a practical approach to guiding and aiding research candidates who are bridging the physical science-based discipline of engineering and the more social science-based discipline of management. Examples of the knowledge and skills that such supervisors require include sound engineering industry knowledge, a focus on quality outcomes, sustainable thinking, the ability to solve the tensions that arise in students undertaking complex research, sound communication skills, a good grounding in adult learning theory and practice, an ability to supervise a wide range of student-based research, and skills like experiential learning that can aid students to maintain momentum in a difficult learning journey.

Through discussing the requirements of the engineering profession, reviewing example of engineering management practice, showing how they link to potential engineering management research and the research journey, discussing challenges in this journey and how these challenges can be met by the use of good supervisory practice, and using good learning approaches, such as those based on reflective practice, it has been shown that well-managed research supervision, which is best undertaken by a research team consisting of supervisors with different skill sets, has a significant role in helping engineering management research students to achieve a positive outcome.

It is concluded that development of the skills of good supervision, development of a sound professional supportive relationship between supervisor and research candidate, good communication and the encouragement of reflection, and the sound use of practices like experiential learning all play a significant role in assisting engineering management doctoral candidates to successfully meet the challenging task of bridging the knowledge and skills in the two fields of engineering and management in a way that not only enables them to make an original contribution to knowledge but also develops those skills in them that will aid them to develop a positive career through the results of their research.

References

Armstrong, G. 2015. *Global construction survey 2015: Climbing the curve*. Zug: KPMG International Cooperative.

Biggs, J. 2001. The reflective institution: Assuring and enhancing the quality of teaching and learning. *Higher Education* 41 (3): 221–238.

Brundtland, G.H. 1987. *Report of the world commission on environment and development – Our common future*. New York: United Nations General Assembly.

Calpito, K.V. 2012. *Teaching graduate students through experiential learning not stress*. Texas: The University of the Incarnate Word.

Crebert, G., C-J. Patrick, V. Cragnolini, C. Smith, K. Worsfold, and F. Webb. 2011. *Professional skills toolkit*. Retrieved 20 May 2016 from http://www.griffith.edu.au/gihe/resources-support/graduate-attributes.

de Lange, N., G. Oillay, and V. Chikoko. 2011. Doctoral learning: A case for a cohort model of supervision and support. *South African Journal of Education* 31: 15–30.

Department of Education and Training. 2013. *Australian qualifications framework*. 2nd ed. Canberra: Australian Government.

Desha, C., K. Hargoves, L. Dawes, and D. Hargreaves. 2013. Collaborative resource development for energy efficiency education. In 24th Annual Conference of the Australasian Association for Engineering Education (AAEE2013), 8–11 Dec 2013, Gold Coast.

Drexhage, J., and D. Murphy. 2010. *Sustainable development: From Brundtland to Rio 2012, background paper prepared for consideration by the high level panel on global sustainability at its first meeting, 19 September 2010*. New York: United Nations Headquarters.

Engineers Australia. 2010. *Our code of ethics*. Canberra: Engineers Australia.

Engineers Australia. 2012. *Australian engineering competency standards stage 2 – experienced professional engineer*. Canberra: Engineers Australia.

Engineers Australia. 2013. *Guide to assessment of eligibility for membership (Stage 1 Competency)*. Canberra: Engineers Australia.

Fernando, S., D. Thorpe, K. Panuwatwanich, and S. Goh. 2015. *Looking beyond contemporary project management*. Paper presented at the EPPM 2015 Conference, Gold Coast.

Haksever, A.M., and E. Manisali. 2000. Assessing requirements of PhD students: The case of construction management and engineering in the UK. *European Journal of Engineering Education* 25 (1): 19–32.

Helfer, F., and S. Drew. 2013. A small-scale investigation into engineering PhD student satisfaction with supervision in an Australian university campus, presented at 2013 AAEE Conference, Gold Coast.

Kolb, D.A. 1984. *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall.

Kolb, A., and D. Kolb. 2009. Experiential learning theory: A dynamic, holistic approach to management learning, education and development. In *The SAGE handbook of management learning, education and development*, ed. S. Armstrong and C. Fukami. London: SAGE.

Kourousis, K.L. 2013. Supervision of engineering doctorates in Australian universities: A review of key issues. *World Transactions on Engineering and Technology Education* 11 (3): 228–232.

Lee, A. 2008. How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education* 33 (3): 267–281.

Merrow, E.W. 2011. *Industrial megaprojects – Concepts, strategies and practices for success*. Hoboken: Wiley.

Nguyen, D.J., and J.B. Larson. 2015. Don't forget about the body: Exploring the curricular possibilities of embodied pedagogy. *Innovation in Higher Education* 40: 331–344.

Rogers, E.M. 2003. *Diffusion of innovations*. New York: Free Press.

Standards Australia. 2009. *Risk management – Principles and guidelines: AS/NZS ISO 31000:2009*. Sydney: Standards Australia. Retrieved from http://www.saiglobal.com/online/autologin.asp.

Standards Australia. 2013. *SA/SNZ HB 436 2013, risk management guidelines: Companion to AS/NZS ISO31000:2009*. Sydney: Standards Australia.

Standards Australia. 2014. *AS ISO 55000:2014 asset management – Overview, principles and terminology*. Sydney: SAI Global Limited.

Trevelyan, J.P. 2014. *The making of an expert engineer*. London: CRC Press/Balkema – Taylor & Francis.

Uddin, W., W.R. Hudson, and R. Haas. 2013. *Public infrastructure asset management*. 2nd ed. New York: McGraw-Hill.

United Nations. 2015. *Paris agreement*. Paris: United Nations Framework Convention on Climate Change.

United Nations Educational, Scientific and Cultural Organisation. 2010. Four dimensions of sustainable development. Retrieved 29 May 2014 from http://www.unesco.org/education/tlsf/mods/theme_a/popups/mod04t01s03.html.

University of Southern Queensland. 2016a. Doctor of philosophy. Retrieved 27 June 2016 from http://www.usq.edu.au/handbook/current/humanities-communication/DPHD.html.

University of Southern Queensland. 2016b. Doctor of professional engineering. Retrieved 27 June 2016 from http://www.usq.edu.au/handbook/current/engineering-built-environment/DPEN.html.

University of Southern Queensland. 2016c. Master of engineering (Research). Retrieved 27 June 2016 from http://www.usq.edu.au/handbook/current/engineering-built-environment/MENR.html.

University of Southern Queensland. 2017. Working towards your confirmation of candidature. Retrieved 10 Nov 2017 from https://www.usq.edu.au/current-students/research/managing-candidature/candidature.

Valdes-Vasquez, R., and L. Klotz. 2011. Incorporating the social dimension of sustainability into civil engineering education. *Journal of Professional Issues in Engineering Education and Practice* 137: 189–197.

Walker, B., and D. Salt. 2012. *Resilience practice – Building capacity to absorb disturbance and maintain function*. Washington, DC: Island Press.

Watson, M.K., C. Noyes, and M.O. Rodgers. 2013. Student perceptions of sustainability education in civil and environmental engineering at the Georgia Institute of Technology. *Journal of Professional Issues in Engineering Education and Practice* 139: 235–243.

Wickson, F., A.L. Carew, and A.W. Russell. 2006. Transdisciplinary research: Characteristics, quandaries and quality. *Futures* 38 (6): 1046–1059.

Doctoral Supervision with Colleagues

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Contents

Abstract

The doctoral supervision of an academic colleague when both are employed in the same university has attracted limited research. In contrast, there is a plethora of research on a range of aspects related to doctoral supervision including

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processes associated with doctoral supervision, guidance for the doctoral supervisor, and the relationship between the doctoral supervisor and candidate. The completion of a doctorate is a substantial investment by both the candidate and the university and is brought into even sharper focus if the candidate is also an employee at the same university. Though each of the parties is driven by different agendas, they share a common interest in the successful completion of the doctorate. This may place additional pressure on the candidate and supervisor, particularly in relation to their professional credibility and career trajectory.

This chapter draws from previous research conducted by the authors' into this complex relationship and presents a number of recommendations to inform best practice. These recommendations have been drawn from the research participants, literature, and the authors' experiences as doctoral candidates and doctoral supervisors for colleagues. The first section discusses important issues related to the area of colleague doctoral supervision. The following section identifies a series of recommendations concerning colleague doctoral supervision for the various stakeholders. The final section offers a blueprint for those tasked with formalizing this potential complex relationship.

Keywords
Doctoral supervision · Colleague · Supervisor · University sector · University policy

Introduction

At a staff meeting at a regional university early in 2016, a member of upper management announced to a group of academics that one of his goals was to oversee a rapid expansion of the number of students enrolled in doctoral programs. He might have generated more support among his listeners had he refrained from quantifying the extent of this expansion. Doubling the number of students enrolled in doctoral studies might, however, have been more aspirational than literal. It might also have been a means of engaging his audience in a discussion. Those members of the audience who would be responsible for providing the infrastructure, both human and material, might have drawn some comfort from identifying the distinction between the two. That may well have dissipated in the face of the additional observation that the time frame for this grand ambition would be four years.

Though in time the numbers were scaled back to more manageable levels, what the episode shows is that institutional change cannot be about means or ends; it must be about means *and* ends. Yet as Åkerlind and McAlpine (2015) warn in the context of doctoral supervision, although it is just as true in a wider context, there is an inherent danger in considering practice independently of purpose, for it reduces meaning and obscures the inherent relationship between the two. In this case, a leader tasked with expanding doctoral programs and encouraging new research marked out an ambitious project that was conceived independently of the broader practices of the institution whose interests he sought to serve. It was not beyond the

institution's capabilities, however, if, in President Kennedy's words, it was prepared to "pay any price, bear any burden, meet any hardship, support any friend, [and] oppose any foe" (Kennedy 1961) to assure its success. This is, however, impossible in the increasingly complex environment of a modern university balancing a web of complex identities, some of which can appear mutually incompatible. This assertion would not be groundbreaking news for an academic facing a heavy teaching load, managerial responsibilities, research demands, and a doctoral student or students with varying temperaments and methods of operating.

Schools and faculties of education benefit from employing academics with currency in the classroom. Unlike the university sector, the school sector does not offer career incentives commensurate with the effort of obtaining a doctoral qualification. A new academic without a doctorate, such as is often the case when a classroom teacher or industry professional shifts to the university sector, is often confronted with the need to commence a doctorate concurrent with the opening months of their employment. Even longer-serving academics who may already hold a tenured position are now also faced with the institutional expectation that they acquire a doctorate if for no other reason than the professional credibility it will confer (Denicolo 2004; Schulze 2014). Balancing the demands of a doctorate and the broader expectations of an academic role can be exacerbated when the doctoral supervisor of a colleague is also a direct line manager with responsibility for reporting on their productivity and performance.

The data for this chapter draws from a research project undertaken by the authors which included interviews across two universities with seven doctoral supervisors of colleagues working in the same institution (Ethics Approval: H15REA245). They ranged from extremely experienced supervisors of up to 20-years' experience to academics relatively new to supervision. A staged analytical approach was taken to identify categories in the interview data using NVivo software, and then the research team read and reread each transcript to analyze the content for further themes (Fereday and Muir-Cochrane 2006). A comparative cross-checking approach was used to conduct an iterative search for similarities and differences between each interview transcript. The following predominant themes were identified from personal narratives written from each participant's interview: institutional processes, relationships, professional credibility, and community and power relationships. Four recommendations arose from review of the data which could inform the approach universities take to colleague doctoral supervision.

Universities and the Neoliberal Context

The call for expansion of his university's doctoral programs cannot be dismissed as one research manager's idiosyncratic response to increasing higher degree research student numbers, for the call to arms was not delivered in a vacuum, nor did it break new ideological ground in anything but scale. The university system has to some extent redefined itself in "market-oriented, utilitarian terms in response to an altered economic environment of public funding constraints, user pays principles, full-fee

paying courses and research directly tied to business needs" (Winter 2009, p. 123). Baguley and Fullarton (2013) contend that although terms such as "benchmarking" and "outputs," with the implication of an objective measure of performance, have traditionally been used in business contexts, "their growing currency in the education sector is indicative of a wider integration of management practices by educational institutions" (27). The aspirational business target announced by the research manager was, no doubt, at least partly informed by what Giroux (2002) and Macoun and Miller (2014) describe as the increasingly neoliberal culture of modern universities. This sees academics operating in environments which prioritize "profit, control, and efficiency, all hallmark values of the neoliberal corporate ethic" (Giroux 2002, p. 434). Kerby (2013) notes that "even amongst educators who conceded that marketing is an indispensable function of schools, there is a perception that it is incompatible with education" (10). Central to this ethic is the performance benchmark.

> As universities generally embrace neoliberal models focused on achieving performance benchmarks, such as academic outputs in the 'right' journals, performance management strategies are increasingly extended to Research Higher Degree (RHD) students in order to increase the efficiency of resources allocated to research supervision and encourage students to operate like even more productive employees. The above trends combine to place constraints on the kind of research that is performed and valued within universities and to generate increasingly competitive cultures within departments. (Macoun and Miller 2014, pp. 289–290)

It is not surprising that many academics have, perhaps without conscious intent, internalized business-related values that are driven by the profit motive (Henkel 1997; Slaughter and Leslie 1997; Winter 2009; Winter and Sarros 2002). This has seen an institutional transformation that has "reshaped the nature of universities, making them into producers of commodities that consumers (students) may choose to demand depending on their competing preferences and the institution's perceived brand image" (Winter 2009, p. 123). A system predicated on this type of accountability must measure outputs, and in doing so academics must provide proof that they are discharging their professional responsibilities in the form of research targets (Harley 2002) and student satisfaction (Sharrock 2000).

> Because institutions attempt to sustain traditional academic cultures while simultaneously promoting and developing corporate ideologies and structures, they are characterised by a multiple or hybrid identity (Foreman and Whetten 2002). As identities are not unitary and fixed but pluralistic and fluid, there exists the context for different expectations and discourses as to: (1) the roles, rights, and obligations of academics (e.g., academics as autonomous professionals; academics as managed employees); and (2) the nature and purpose of the institution (e.g., a crucible of learning and education; a profit-making enterprise). (Winter 2009, p. 124)

Yet this leaves institutions hopelessly compromised by the need to balance their corporate identity and their educational/service identity. The confusion that this can lead to is particularly evident in how the universities rate their own doctorates, which, if research conducted in Australian universities is generalizable, is not highly.

Analysis of job advertisements undertaken by Pitt and Mewburn (2016) for 42 lower-level academic jobs on the websites of eight universities indicated that in marketplace terms they had little faith in their own product. The advertisements betrayed a confusion over academic identity. In addition to research and teaching, which were assumed, universities framed their understanding of academic roles using what was dismissively characterized "as a host of "really weird" job criteria" (Ross 2016). These ranged from organizing seminars to pastoral care for work-stressed colleagues. One advertisement stipulated 24 key selection criteria (KSC), of which 21 were essential.

> Some KSC just seemed nonsensical (e.g., 'Development and delivery of university teaching and learning principles and methodologies') while others seemed contradictory to the focus of the role, including research-only roles that listed teaching as a requirement and teaching-focussed roles that listed research. While others seemed unclear on what was 'essential' and 'desirable' with one university adding a third, 'compulsory' KSC category. (Pitt and Mewburn 2016, p. 93)

Mewburn was moved to ask "if we design this education experience, and we evaluate it and teach it and employ it, why aren't we happy?" (Ross 2016). The answer, unfortunately, is that a hybrid identity inevitably spawns contradictory impulses. It is one thing to say that institutions have evolved, but that is entirely different to people's perceptions altering along a similar time line. Halse and Malfroy (2010) argue that these changes in the higher education landscape are nothing short of a transformation, one which has "triggered structural changes, new funding regimes, and stricter accountability and quality assurance requirements that have changed the nature of doctoral education and the work of doctoral supervisors" (79). Yet the changes in perception have not kept pace.

Academics Negotiating the Hybrid Identity of the University

The identity confusion which universities are experiencing is also felt by academics, particularly those undertaking a doctorate in conjunction with their core employment. They are, by definition, boundary spanners who dwell in no man's land, perceived by colleagues as neither student nor fully fledged academic. This can be in stark contrast to their perceived competence in their other duties and the anomaly that their standing can range between new sessional staff member to experienced academic with administrative duties. This ambiguity can extend even to the institutions that create and maintain the "official" culture. Scott (2004, p. 439) characterizes universities as perhaps the most "value-laden institutions in modern society," ones in which "values such as collegial governance, institutional autonomy and academic freedom have a long tradition of defining the essential elements of academic and university identities" (Winter 2009, p. 122).

It is understandable that a research manager whose career is tied to meeting or exceeding benchmarks would want to see increased productivity under their watch. It is equally understandable that academics with a sustained ideological commitment

to supervision as an integral part of their professional identity would want to continue despite an awareness that time release comes perilously close to being an honorarium. So what dominates the supervision landscape is the spectacle of groups locked into an ostensibly collaborative venture where one side remains committed to discipline scholarship, intellectual curiosity, a community of practice, accountability to peers, and professional autonomy (Ramsden 1998; Winter 2009) and the other which characterizes some of these as "fanciful, steeped in a bygone age, or insular and ignorant of the competitive and financial realities facing universities today" (Winter 2009, p. 123) and, of course, every combination in between. One of the interviewees may well have lamented that he was steeped in the values of a bygone age when he took up employment at another university but committed to finishing supervising candidates at this previous university. He observed that "there was no money or recognition or anything, but you have an ethical commitment to people."

The question, therefore, of how to more effectively manage the doctoral supervision of colleagues must be explored in the context of where it sits in the broader university experience. For though an academic's professional identity might be neatly divided in their official role description between teaching, research, and service, in reality, this compartmentalization is both factually inaccurate and destructive of the very ends it seeks to achieve. Each of the interviewees whose responses have shaped the recommendations section provided their workload allocations followed almost immediately by an observation of varying directness that indicated that the figures were essentially meaningless. Not one of the seven indicated anger or even low-level dissatisfaction with that situation. If anything, the overriding reaction was informed by an amused, semi-contemptuous dismissal of the figures informed by the assumption that the interviewer would, as an academic, be in on the joke.

Doctoral Supervision of Colleagues in a Changing Landscape

Though there is a general consensus that change has occurred in the higher education sector, the implications are far more contested. In a series of interviews, the authors undertook with academics who have supervised colleagues, not one raised the link between doctoral supervision and their university's neoliberal business agenda unprompted and not one showed an inclination to pursue that line of thinking when it was raised for them. Instead, they spoke sincerely and enthusiastically of "an ethical commitment to people," students as "colleagues," supervision as the pursuit of a "mutual enquiry process," of "becoming friends in the process," and the act of supervising as being nothing short of a "privilege." It is hardly surprising that academics were then nonplussed by the public commitment to doubling outputs in an area that they valued so highly and which informed their professional identity. Again, this was not a site specific aberration. The demand for research education "seems strong" with record numbers of students enrolling in research degrees (Pitt and Mewburn 2016, p. 88).

Academics supervising colleagues who are enrolled in doctoral courses would no doubt be particularly aware of the inaccuracy of workload models, for they find

themselves confronted by the identity confusion that afflicts many academics who are already immersed in a complex web of roles ranging across a broad spectrum which includes teacher, administrator, researcher, and mentor.

> In short, professional life is increasingly becoming a matter not just of handling overwhelming data and theories within a given frame of reference (a situation of complexity) but also a matter of handling multiple frames of understanding, of action and of self-identity. The fundamental frameworks by which we might understand the world are multiplying and are often in conflict. (Barnett 1999, p. 6)

The supervisory doctoral relationship with colleagues is therefore particularly complex due to a range of factors including the expectations of an academic's role, the type of supervision, the academic level of the candidate, supervisor/supervisee "fit," personal relationships, and institutional governance (Denicolo 2004; Guerin et al. 2015; Manathunga 2007; Moxham et al. 2013; Pyhältö et al. 2015; Stephens 2014; Watson 2012). Some supervisors engage in a process that they might conceptualize in the most altruistic of terms without ever really engaging with the reality that they do so against the background of a growing commodification of doctorates. Some universities list on their websites a list of preapproved doctoral topics and the available supervisors as a means of streamlining the process of enrolment. When they do engage with supervision, the manner in which an academic approaches the task is inevitably shaped by their own experience of supervision (Amundsen and McAlpine 2009; Lee 2008). This is hardly surprising, for as Turner (2015) observes, early career academics frequently undertake doctoral supervision shortly after they complete their own doctoral study. Given that they have no other frame of reference, they often attempt to replicate their own experience or in the case of a negative supervisory experience consciously attempt to avoid doing so.

This seemingly premature introduction to supervision is further problematized by the fact that it often occurs with limited or no systematic preparation (Amundsen and McAlpine 2009; Peelo 2011; Turner 2015). While looking to develop their professional and supervisory identities (Lee 2008), academics are left to find their own way without feedback or guidance (Blass et al. 2012; Turner 2015). That each of the interviewees began their supervisory careers without any preparation beyond their own doctorate says much about the lack of alignment between the desire of a corporate structure to offer a product that will be subject to often quite rigorous benchmarks and the need to ensure that staff with the necessary skills are available to conduct it. Beyond even that revelation is the extent to which staffs have resigned themselves to this amateurish approach. Not one of the interviewees expressed any sense of concern let alone anger that they began what they all agree is an integral part of their role as academics without preparation (Guerin et al. 2015).

Given the equanimity with which they recall having been initiated into the world of doctoral supervision, it is unsurprising that the interviewees generally did not see a profound difference between the supervision of a colleague and "normal supervision." This reflects the difficulty in disentangling this unique relationship from the broader experience of doctoral supervision. What Denicolo (2004) found is that good supervision by a colleague can be indistinguishable from the "normal"

experience of good supervision. The experience is characterized as a richer version of what one would instinctively associate with a positive supervisory experience. This was the experience of a number of the participants: "You just apply the same judgements that you apply to anyone else," "The approach I take with pretty much any student," and "I've always been able to separate the [other work] functions quite away from the person" are indicative of a view that each supervision has unique challenges so a work relationship is merely a contextually specific characteristic. Each interviewee saw supervision as informed by the establishing and maintaining of a relationship. As Stephens (2014, p. 539) concedes, however, "the reality of doctoral candidature is that it rarely progresses in an idealised way." The effect of a strained or ultimately unsuccessful supervisory relationship between colleagues can resonate throughout their workplace. Yet again, two interview subjects who had unsatisfactory experiences in supervising colleagues and are now unprepared to countenance any further similar arrangements still see the issues as failings specific to the individuals involved rather than indicative of an inherent concern within an institutional setting. The interviewees' preparedness to commence supervision without preparation, the absence of any subsequent concern about the appropriateness of that arrangement, their disinclination to view doctoral supervision within a business paradigm, and their staunch commitment to the act of supervision as something quite central to the professional identity would tend to show that in this instance the universities are perhaps better served than they really deserve to be (McAlpine 2013).

Yet as Forsyth (2014) observed, for all the growth of doctorates, there has not been a commensurate growth in the academic workforce. Hopes for a more graduated introduction to supervision are likely, therefore, to be dashed, as will the employment hopes of many newly graduated doctoral students. It is clear that not everyone is singing from the same song sheet.

Recommendations for Colleague Doctoral Supervision

Universities make significant investments in areas such as staff recruitment which enhance their reputational standing. This becomes even more complex when staff undertakes a doctorate at the institution in which they are employed given that it requires an even greater commitment of university resources. If staff leaves prematurely, the institution is unable to offset the expenditure through measures such as grants or other productivity gains (O'Meara et al. 2016). Reasons for staff leaving an institution are many and varied and can include family reasons, geographic location, academic identity, gender issues, challenging staff relationships, lack of support, or greater opportunities elsewhere (Guzmán-Valenzuela and Barnett 2013; O'Meara et al. 2014; Probert 2005; Easterly and Ricard 2011). Though staff changes are inevitable and can be positive for an institution, to ameliorate this "brain drain" additional support needs to be provided for both colleagues undertaking doctorates and those supervising them.

The following recommendations have been drawn from the authors' recent research in this area and their experiences as doctoral candidates and supervisors of colleagues and relevant literature. The four recommendations are predicated on an institutional recognition that the doctoral supervision of a colleague is in fact a different form of supervision rather than just a potentially richer conventional relationship. The authors have assumed that such recognition is forthcoming and has framed the recommendations as a series of responses that veer into the contested terrain of "common sense." The fact that they are very human-centered responses will make them attractive to supervisors wedded to an altruistic construct of service. Given that they are seeking to be cost-effective and make use of available resources, they will be equally attractive to the administrators tasked with funding any initiative. In adopting these recommendations, the richness of colleague supervision is retained, and the potential challenges are planned for and hopefully avoided.

Recommendation 1: The Doctoral Supervision of Colleagues Is Undertaken by Experienced Supervisors Who Are Not Direct Line Managers of the Candidate

An important issue for academic staff undertaking a doctorate is negotiating the hybrid identity of being both an academic and a student in addition to their relationship with a colleague who is also their supervisor (Pyhältö et al. 2015). Viczeko and Wright (2010) offer an understanding of identity as it pertains to teacher education that has particular relevance to doctoral supervision. The relationship between the supervisor and student, in their view, must evolve as the collaboration deepens over the course, literally, of years of endeavor. Denicolo (2004) explores this transition, implying that the relationship and thus the identities of the protagonists, and sometimes antagonists, were mutable, subject like any organism to change. In addition, as Denicolo (2004) observes, colleague supervisees regress to novice status as a new doctoral candidate and therefore "special skills are demanded of the colleague supervisor no matter what form the relationship takes in other arenas of their work" (p. 696). Denicolo (2004) also notes from the supervisor's perspective that supervising a colleague can result in issues of authority, difficulty in balancing a management/administrative role with the support role of supervisor, and the role switching required to be both a friend/colleague and a supervisor providing critical feedback.

The supervisor/student relationship takes on an importance that transcends the mere production of a thesis, although in some cases successful completion is linked to a tenured position and/or ability to become a principal supervisor. The student is socialized not just into the world of supervision but into the academic world enacted through models of mentorship, teaching, people skills, and management. Tierney and Bensimon (1996, cited in Ponjuan et al. 2011) posit that new academic staff are socialized into academic life partly through their interactions with senior faculty who are seen as role models. As part of their leadership role, senior faculty, particularly through their doctoral supervision responsibilities, are expected to embrace generative

research mentoring and support the intellectual well-being of future cohorts of scholars (Fletcher 2012; Lemmer 2016).

The importance of an experienced supervisor to provide support for a colleague undertaking a doctorate is critical in order to navigate the complexities of this transition. Researchers have highlighted power issues in supervisory relationships which can both empower and disempower candidates (Doloriert et al. 2012; Guerin et al. 2015; Hemer 2012). The multiple roles of an academic with their "inherent tensions, and sometimes conflicting agendas and constructs" can be difficult to navigate even for more experienced academics (Denicolo 2004, p. 694). The addition of the role of either doctoral supervisor or supervisee to this list is "likely to exacerbate an already super-complex situation" (Barnett 2000, cited in Denicolo 2004, p. 695).

Recommendation 2: The Implementation of Internal Processes Should Recognize the Complexities of Doctoral Supervision of Colleagues

Universities often provide some release time for staff members undertaking doctoral study either within the same institution or at another university as part of their workload allocation. Supervisors are also granted time allocation for supervising higher degree research (HDR) students which is also how staff undertaking a doctorate are identified at the university. There does not appear to be any additional internal recognition of colleague supervision in the university sector. There are various pressures on doctoral supervisors which can also be affected by the employment level and stage of the colleague, who may be sessional, fractional, or full time, and their career aspirations. Some will require, or may demand, much greater time commitment and mentoring than others.

There can be expectations that colleagues undertaking a doctorate have ready access to supervisors who are often on the same campus and an appropriate and easily accessible research infrastructure. However, issues can arise due to the proximity of the work environment, particularly if progress is hampered by any number of impediments that can arise over the course of a doctorate. Other colleagues may also wish to discuss the doctoral candidate's work with the supervisor which can transgress boundaries of confidentiality afforded to other doctoral students (Denicolo 2004). To assist in alleviating some of these issues, universities need to clearly recognize this particular supervisory relationship.

Supervisees may feel they are unable to approach the supervisor outside of designated times due to their awareness of their heavy workload and commitments. A specific policy related to workload allocation and expectations for colleague doctoral supervisors and supervisees also needs to be considered so that it is prioritized in workload allocation models. Some universities provide paid leave for 3–6 months for doctoral completion for colleagues which is particularly helpful in the final critical stage of writing. However, commensurate consideration needs to be afforded by supervisors who may still be managing a full-time academic role and providing feedback and support during this intensive period of research and writing

for the doctoral candidate. Further recognition could be through the inclusion of a multiplier in workload formulas related to research which recognizes publications co-authored by the supervisor with the supervisee during the period of the doctorate.

An alternate understanding of supervision may also be an area worthy of further exploration. Watson (2012) suggests group supervision practices "could be considered for all forms of colleague student supervision" (573). The formation of a group of people tasked to support colleague doctoral supervisors which includes key personnel from administration who understand the particular pressures on academic staff would assist in building new communities through supportive collaborative structures. In addition, online resources for supervisors with a particular focus on colleague doctoral supervision could be developed with a community of practice established for supervisors negotiating this complex relationship.

Recommendation 3: Institutional Recognition Should Be Provided for the Doctoral Supervisor of a Colleague

Often institutional policies around areas such as doctoral study have been developed by administrative staff with the result that they can focus on institutional processes to the detriment of other considerations. Experienced academic supervisors need to contribute to the writing and implementation of policies and processes around doctoral supervision with a particular focus on some of the issues that may arise during colleague supervision. The doctoral supervision of a colleague includes an important element of mentoring, which is also expected of an experienced supervisor who is aware of institutional expectations in this regard, but takes on a more specific nature for colleagues (Manathunga 2007). In order to effectively mentor, there needs to be an institutional oversight of the supervisee's academic role, including teaching and service, to ensure a holistic approach that recognizes that the doctoral journey is part of the collective responsibility of an institution (McAlpine 2013). Given the importance, particularly for new academics, of completing their doctorate as an important milestone in their academic career, it is essential that supervisors, and their own line managers, are aware of their workload and research commitments.

A group meeting with the colleague supervisor, candidate, and the head of school (or equivalent) to discuss the workload commitments of the colleague they are supervising is a necessary prerequisite to an organized commencement of the doctoral journey. This will enable the person responsible for workload allocation and the colleague supervisor to have a holistic view of the supervisee's academic commitments. This approach moves beyond the neoliberal approach currently being undertaken by personalizing mentoring and adapting it to the needs of the individual mentee (Franko et al. 2016). For though the doctoral experience might be the major focus of the student's professional life, it is unlikely that it will be at the center of the supervisor's universe irrespective of their dedication.

Supervisors involved in colleague doctoral supervision should be acknowledged through institutional processes which recognize the additional pressures and complexities of this relationship. This may include formal acknowledgment through the

research office, a social gathering of colleague supervisors from across the university, and additional workload for this supervision. As well as providing a supportive network, the acknowledgment at higher levels of the university will contribute to a positive and collegial environment and may encourage other supervisors to undertake this important responsibility for a colleague.

Recommendation 4: Further Support Should Be Provided to Both Supervisor and Doctoral Candidate by an External Critical Friend

There are also opportunities to move beyond an institution-centric view of the supervision. It may be possible to include colleagues from another university or, if this is not feasible, other sections of the university, to support the doctoral team as a "critical friend." This may serve to bring further balance and perspective to this complex doctoral relationship. This could be extended to a critical friend for the supervisor so they are able to focus on any issues related to the doctoral relationship and receive another perspective which is not necessarily aligned to their institutional processes and policies. This critical friendship could also take the form of co-mentoring (Allison and Ramirez 2016) and could be mutually beneficial. If there are concerns regarding confidentiality by seeking this mentorship outside the university, then a colleague in a different section of the university may be able to undertake this role. In addition the colleague being supervised could also be paired with an early career researcher who can provide important advice about how to prepare for the next stage of their career after completion of their doctorate and what strategies they can implement to build their academic profile.

These co-mentoring arrangements could be formalized by the respective universities or sections of the university with contracts drawn up establishing goals and responsibilities. External colleagues may also be offered adjunct appointments in order to ensure that the relationship is mutually beneficial and to further strengthen the research relationship. Critical friends need to be established as early as possible in the doctoral relationship with clear role expectations and work allocation. In addition, critical friends can also advise whether a team needs to be altered as a candidate progresses through their journey with scope for this to occur to address changes in aspects of the research such as its design or methodology which may require additional or different expertise.

Conclusion

Ponjuan et al. (2011) posit that "as the retirement rates of senior faculty steadily increase, higher education institutions will need to replace more faculty members than ever before, placing a premium on the recruitment and retention of new faculty members" (319). Recruitment of quality staff is one of the challenges which academic leaders are currently experiencing in a university sector which is increasingly emphasizing performance and productivity exemplified by the link to quality

research and global university rankings (Jepsen et al. 2012). As increasing numbers of academics shift their priorities from teaching to research, there are additional tensions related to knowledge creation and transfer and the administrative processes which impede this progress (Braun et al. 2016; Jepsen et al. 2012).

Colleague doctoral supervision is a collective institutional responsibility which needs to be highlighted through formal university policies and processes. The double investment by a university in the current neoliberal environment warrants both "risk mitigation" but also a recalibration of the purpose of universities and the role of the doctorate. Supervising a colleague through their doctoral journey should be a positive and enriching experience with unequivocal support from the university shown throughout this journey. This close alignment between "means" and "ends" requires an acknowledgment of need and an effective and sensitive use of resources to respond to them.

References

Åkerlind, Gerlese, and Lynn McAlpine. 2015. Supervising doctoral students: Variation in purpose and pedagogy. *Studies in Higher Education* 24: 321–324. https://doi.org/10.1080/03075079.2015.1118031. http://www.tandfonline.com/action/showCitFormats?.

Allison, Valerie A., and Laurie A. Ramirez. 2016. Co-mentoring: The iterative process of learning about self and "becoming" leaders. *Studying Teacher Education* 12 (1): 3–19.

Amundsen, Cheryl, and Lynn McAlpine. 2009. 'Learning supervision': Trial by fire. *Innovations in Education and Teaching International* 46 (3): 331–342. https://doi.org/10.1080/14703290903068805.

Baguley, Margaret, and Lee Fullarton. 2013. The education of artistic vision: A collaboration between the community and the academy. *International Journal of Pedagogies and Learning* 8 (1): 27–38.

Barnett, Ronald. 1999. *Realizing the university in an age of supercomplexity*. Philadelphia: Society for Research into Higher Education and Open University Press.

Blass, Eddie, Anne Jasman, and Roger Levy. 2012. Supervisor reflections on developing doctoralness in practice-based doctoral students. *Quality Assurance in Education* 20 (1): 31–41.

Braun, Susanne, Claudia Peus, Dieter Frey, and Kristin Knipfer. 2016. Leadership in academia: Individual and collective approaches to the quest for creativity and innovation. *Monographs in Leadership and Management* 8: 349–365. https://doi.org/10.1108/S1479-357120160000008013.

Denicolo, Pam. 2004. Doctoral supervision of colleagues: Peeling off the veneer of satisfaction and competence. *Studies in Higher Education* 29 (6): 693–707. https://doi.org/10.1080/03075070420002872 03. http://www.tandfonline.com/action/showCitFormats?

Doloriert, Clair, Sally Sambrook, and Jim Stewart. 2012. Power and emotion in doctoral supervision: Implications for HRD. *European Journal of Training and Development* 36 (7): 732–750. https://doi.org/10.1108/03090591211255566.

Easterly, Debra M., and Cynthia S. Ricard. 2011. Conscious efforts to end unconscious bias: Why women leave academic research. *Journal of Research Administration* 17 (1): 61–73.

Fereday, Jennifer, and Eimear Muir-Cochrane. 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods* 5 (1): 80–92.

Fletcher, Sarah. 2012. Research mentoring teachers in intercultural education contexts; self-study. *International Journal of Mentoring and Coaching in Education* 1 (1): 66–79.

Foreman, Peter and David A. Whetten. 2002. Members' identification with multiple-identity organizations. *Organization Science* 13 (6): 618 –635.

Forsyth, Hannah. 2014. *A history of the modern Australian university*. Sydney: NewSouth Publishing.

Franko, Debra L., Jan Rinehart, Kathleen Kenney, Mary Loeffelholz, Barbara Guthrie, and Paula Caligiuri. 2016. Supporting faculty mentoring through the use of creative technologies: There's an app for that. *International Journal of Mentoring and Coaching in Education* 5 (1): 54–64.

Giroux, Henry A. 2002. Neoliberalism, corporate culture, and the promise of higher education: The university as a democratic public sphere. *Harvard Educational Review* 72 (4): 425–463.

Guerin, Cally, Heather Kerr, and Ian Green. 2015. Supervision pedagogies: Narratives from the field. *Teaching in Higher Education* 20 (1): 107–118. https://doi.org/10.1080/13562517.2014.957271. http://www.tandfonline.com/action/showCitFormats?.

Guzmán-Valenzuela, Carolina, and Ronald Barnett. 2013. Developing self-understanding in pedagogical stances: Making explicit the implicit among new lecturers. *Educação e Pesquisa* 39 (4): 891–906.

Halse, Christine, and Janne Malfroy. 2010. Retheorizing doctoral supervision as professional work. *Studies in Higher Education* 35 (1): 79–92. https://doi.org/10.1080/03075070902906798. http://www.tandfonline.com/action/showCitFormats?.

Harley, Sandra. 2002. The impact of research selectivity on academic work and identity in UK universities. *Studies in Higher Education* 27 (2): 187–205.

Hemer, Susan R. 2012. Informality, power and relationships in postgraduate supervision: Supervising PhD candidates over coffee. *Higher Education Research and Development* 31 (6): 827–839. https://doi.org/10.1080/07294360.2012.674011. http://www.tandfonline.com/action/showCitFormats?.

Henkel, Mary. 1997. Academic values and the university as corporate enterprise. *Higher Education Quarterly* 51 (2): 134–143.

Jepsen, Denise M., Melinda M. Varhegyi, and Daniel Edwards. 2012. Academics' attitudes towards PhD students' teaching: Preparing research higher degree students for an academic career. *Journal of Higher Education Policy and Management* 34 (6): 629–645. https://doi.org/10.1080/1360080X.2012.727706.

Kennedy, John F. 1961. *Inaugural address of President John F. Kennedy*. Washington, DC: John F. Kennedy Presidential Library and Museum. http://www.jfklibrary.org/Research/Research-Aids/Ready-Reference/JFK-Quotations/Inaugural-Address.aspx. Accessed 26 Apr 2016.

Kerby, Martin. 2013. Selling the dream: Marketing an education. *International Journal of Pedagogies and Learning* 8 (1): 10–17.

Lee, Anne. 2008. How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education* 33 (3): 267–281. https://doi.org/10.1080/03075070802049202. http://www.tandfonline.com/action/showCitFormats?.

Lemmer, Eleanor M. 2016. The postgraduate supervisor under scrutiny: An autoethnographic inquiry. *Qualitative Sociology Review* 12 (1): 78–97.

Macoun, Alissa, and Danielle Miller. 2014. Surviving (thriving) in academia: Feminist support networks and women ECRs. *Journal of Gender Studies* 23 (3): 287–301. https://doi.org/10.1080/09589236.2014.909718.

Manathunga, Catherine. 2007. Supervision as mentoring: The role of power and boundary crossing. *Studies in Continuing Education* 29 (2): 207–221. https://doi.org/10.1080/01580370701424650.

McAlpine, Lynn. 2013. Doctoral supervision: Not an individual but a collective institutional responsibility. *Ifancia y Aprendizaje – Journal for the Study of Education and Development* 36 (3): 259–280.

Moxham, Lorna, Trudy Dwyer, and Kerry Reid-Searl. 2013. Articulating expectations for PhD candidature upon commencement: Ensuring supervisor/student 'best fit'. *Journal of Higher Education Policy and Management* 35 (4): 345–354. https://doi.org/10.1080/1360080X.2013.812030.

O'Meara, KerryAnn, Andrew Lounder, and Corbin M. Campbell. 2014. To heaven or hell: Sensemaking about why faculty leave. *The Journal of Higher Education* 85 (5): 603–632. https://doi.org/10.1353/jhe.2014.0027.

O'Meara, KerryAnn, Jessica Chalk Bennett, and Elizabeth Neihaus. 2016. Left unsaid: The role of work expectations and psychological contracts in faculty careers and departure. *The Review of Higher Education* 39 (2): 269–297. https://doi.org/10.1353/rhe.2016.0007.

Peelo, Moira. 2011. *Understanding supervision and the PhD*. London: Continuum.

Pitt, Rachael, and Inger Mewburn. 2016. Academic superheroes? A critical analysis of academic job descriptions. *Journal of Higher Education Policy and Management* 38 (1): 88–101. https://doi.org/10.1080/1360080X.2015.1126896.

Ponjuan, Luis, Valerie Martin Conley, and Cathy Trower. 2011. Career stage differences in pre-tenure track faculty perceptions of professional and personal relationships with colleagues. *The Journal of Higher Education* 82 (3): 319–346.

Probert, Belinda. 2005. 'I just couldn't fit in': Gender and unequal outcomes in academic careers. *Gender, Work and Organization* 12 (1): 50–72. https://doi.org/10.1111/j.1468-0432.2005.00262.

Pyhältö, Kirsi, Jenna Vekkaila, and Jenni Keskinen. 2015. Fit matters in the supervisory relationship: Doctoral students' and supervisors' perceptions about the supervisory activities. *Innovations in Education and Teaching International* 52 (1): 4–16. https://doi.org/10.1080/14703297.2014.981836.

Ramsden, Paul. 1998. *Learning to lead in higher education*. London: Routledge.

Ross, John. 2016. PhDs failing to make the grade with uni employers. *The Australian.* http://www.theaustralian.com.au/higher-education/phds-failing-to-make-the-grade-with-uni-employers/news-story/3239e6b9bef288e8bcb4f1fe306042cc. Accessed 15 Apr 2016.

Schulze, Salomé. 2014. Finding the academic self: Identity development of academics as doctoral students. *Koers – Bulletin for Christian Scholarship* 79 (1): 1.

Scott, Peter. 2004. Ethics 'in' and 'for' higher education. *Higher Education in Europe* 29 (4): 439–450.

Sharrock, Geoff. 2000. Why students are not (just) customers (and other reflections on life after George). *Journal of Higher Education Policy and Management* 22 (2): 149–164.

Slaughter, Shelia, and Larry L. Leslie. 1997. *Academic capitalism: Politics, policies, and the entrepreneurial university*. Baltimore: John Hopkins University Press.

Stephens, Simon. 2014. The supervised as the supervisor. *Education and Training* 56 (6): 537–550. https://doi.org/10.1108/ET-10-2012-0095.

Turner, Gill. 2015. Learning to supervise: Four journeys. *Innovations in Education and Teaching International* 52 (1): 86–98. https://doi.org/10.1080/14703297.2014.981840. http://www.tandfonline.com/action/showCitFormats?.

Viczeko, Melody, and Lisa L. Wright. 2010. Negotiating identities in the transition from graduate student to teacher educator. *Australian Journal of Teacher Education* 35 (1): 13–26. https://doi.org/10.14221/ajte.2010v35n1.3. Accessed 30 Mar 2016.

Watson, Tom. 2012. Colleague supervision – 'ignored and undervalued'? The views of students and supervisors in a new university. *Journal of Further and Higher Education* 36 (4): 567–581. https://doi.org/10.1080/0309877X.2011.644774.

Winter, Richard. 2009. Academic manager or managed academic? Academic identity schisms in higher education. *Journal of Higher Education Policy and Management* 31 (2): 121–131.

Winter, Richard, and James Sarros. 2002. The academic environment in Australian universities: A motivating place to work? *Higher Education Research and Development* 21 (3): 241–258.

The Doctor of Business Administration: Managing Candidate Diversity and the Academy

23

Michelle Wallace and Teresa Marchant

Contents

Abstract

Professional doctorate programs have been offered through Australian universities since the mid-1990s, and the Doctor of Business Administration (DBA) has been at the forefront of offerings. The chapter provides a snapshot of

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contemporary DBA programs in Australia and explores the diversity of DBA candidates and their needs. The authors explore issues regarding the expectations of academic managers, candidates, and supervisors of DBA programs, current positive and negative outcomes of DBA programs from both management and candidate perspectives, the structure of DBA programs, and the gap between coursework and thesis. Practical suggestions are made to manage the status of the DBA in the academy, enhance the structure of the DBA programs, and better manage the enculturation of candidates into the academic genre, given the applied nature of a DBA program. This chapter is informed by contemporary literature on doctoral candidature and two recent empirical studies; one is a qualitative study on the DBA co-led by the first author and funded by the Australian government's Office of Learning and Teaching, and the other is an analysis of Australian government statistics on DBA numbers and completions 1993–2013.

Keywords
DBA · Academic managers · Candidates · Diversity · Supervisors · Course structure · Better practice

Introduction

Professional doctorate programs have been offered through Australian universities since the mid-1990s, and the inception of the Doctor of Business Administration (DBA) degree offered through business and management schools dates from this time. The antecedents of Australian professional doctorates may be seen in the professional doctorate programs such as the DBA offered by American universities from the 1920s, most notably, Harvard. The DBA qualification is designed so that graduates will undertake a program of structured learning and independent supervised study that produces significant and original research outcomes, culminating in a thesis, dissertation, and examination by at least two external expert examiners (The Australian Qualifications Framework Council 2013).

The Australian Qualifications Framework (AQF) deems the professional doctorate equivalent to the PhD at AQF level 10. Graduates at this level will have a "systematic and critical understanding of a complex field of learning and specialized research skills for the advancement of learning and/or for professional practice" (Australian Qualifications Framework Council 2013, p. 63). The AQF makes a distinction between the professional doctorate and the PhD; the former (typically entitled "doctor of field of study"):

> '. . .is designed so that graduates will have undertaken a program of structured learning and independent supervised study that produces significant and original research outcomes culminating in a thesis, dissertation, exegesis or equivalent for independent examination by at least two external expert examiners of international standing'. (Australian Qualifications Framework Council 2013, p. 63)

The advent of the DBA in Australia was a result of two factors. In 1989, Australia's Higher Education Council (HEC) identified that only one-third of PhD graduates were taking up academic appointments, with most finding work in other public or private sectors or going overseas (National Board of Employment, Education and Training (NBEET) 1989). These findings questioned the ability of doctoral courses to meet the needs of future employers, and, as such, a recommendation was made to investigate the potential for the establishment of professional doctorates (Neumann and Goldstein 2002). At the same time, the HEC determined that there would be "no further expenditure in the employment education and training portfolio to cover new policy proposals" (NBEET 1989, p. viii). This ensued a decline in government funding to universities that continues to this day. However, universities were now allowed to offer full-fee paying programs, and a number of universities considered offering professional doctorates in a range of disciplines.

The professional doctorate in the form of the DBA was singled out as particularly relevant to business disciplines, as numbers of academic staff with PhDs were low in those areas (Neumann 2005). DBA programs were thus developed with the aim of giving practitioners the opportunity to gain doctoral-level qualifications and contribute specialized, applied knowledge to workplace challenges (Neumann and Goldstein 2002).

The second factor relates to credential creep and the increasing demand for postgraduate education. The increased number of MBA graduates or those with similar coursework master's degrees, unable to enter PhD programs because they did not possess an honours or a research master's degree, was seeking a pathway to doctoral study for professional or personal reasons (Meredith 1998). Arguably, instigation of the DBA qualification democratized doctoral education in business/management by offering entry to the highest-level degree available to those with practitioner backgrounds and aspirations to be more effective in their nonacademic roles. Master's by coursework graduates from the business/management workforce had already paid full fees for their MBAs and similar awards, and a DBA could be perceived as a good investment and pathway to a doctorate with an applied focus (Wallace et al. 2015c). Business schools have thus been at the forefront of entrepreneurial activities and have sought diverse sources of students domestically, through offering postgraduate education to those already in the workforce, and abroad, through international and transnational programs. In many cases, they have become the "cash cows" for universities seeking alternative sources of revenue.

Today, the proportion of Australians with doctoral qualifications moving to industry and nonuniversity-based research positions is increasing. In a 2007 study examining employment outcomes for PhD graduates, undertaken by the University of Queensland Social Science Research Centre, 82% of 1028 respondents identified themselves as professionals (Group of Eight 2013, p. 26). Australia's Group of Eight (Go8) universities (the eight oldest and largest research-intensive universities in the country) recognize that this trend has implications for the success criteria used to measure all doctoral students: "[T]he non-academic jobs that PhD graduates move into [...] will often require a set of attributes different from those that characterise a

good academic" (Group of Eight 2013, p. 26); an emphasis on generic employability skills for PhDs has been suggested (Manathunga et al. 2012; Kiley and Bell 2014).

Access Economics (2010) has predicted that demand for research-qualified people is set to grow at a faster rate than overall employment demand in the Australian economy over the decade to 2020, with the number of employed individuals with a doctorate by research qualification alone expected to rise by 3.2% per annum over this period. Thus, a strong argument can be made for professional doctorates such as the DBA that meet the needs of industry and provide educational and career pathways.

There is a considerable body of research on the PhD experience, into such aspects as: factors affecting academic engagement, satisfaction with their studies, and dropping out (Sakurai et al. 2012), pedagogical concerns (Zeegers and Barron 2012), the changing role of the supervisor and desirable supervisor characteristics (Lee 2008), and attrition rates (Group of Eight 2013) to name a few. While it could be argued that these matters are also applicable to professional doctorates, a counterargument can be mounted that the nature of professional doctorates such as the DBA and the professional and learning backgrounds and career trajectories of DBA candidates differ sufficiently from the PhD that they deserve their own body of research. The DBA is different from the PhD given DBA candidates' business or management backgrounds (Morley 2005; Neumann 2005). The transition from being a student on a taught undergraduate or master's by coursework program to a doctoral candidate (nascent researcher), with the associated issues of developing independence, has also been noted as problematic for candidates (Sakurai et al. 2012). Consequently, there is an identified gap in knowledge and its practice implications that needs to be addressed.

There is a small but growing body of literature relevant to the issues explored in this paper, some covering professional doctorates and some specifically focusing on the DBA. These include the evolution of such programs (Erwee 2004; Pearson et al. 2008; Sarros et al. 2004), how professional doctorates are defined (Bareham et al. 2000; Hay 2004; Morley), and the motivation for entry (Fenge 2009; Wellington and Sikes 2006). Also covered are supervision (Morley 2005), integrating research and coursework (Manathunga et al. 2004), the thesis genre (Morley 2005), how professional doctorate theses are examined (Sarros et al. 2007), and offshore offerings (Galvin 2004; Marchant 2012). The DBA has attracted a highly diverse range of students, whose profile, background, and learning needs, motivations, and career trajectories, arguably, differ from the more "traditional" PhD candidate (Wallace et al. 2014).

However, there has been a continuing debate around the definition, quality, and worth of the DBA in comparison to the PhD (Evans et al. 2005). Attrition rates and quality standards in DBA programs have been of concern to university managers as regards their impact on university resources and academic standing. Providing quality supervision has been an issue of concern, as have coursework preparation (Wallace et al. 2015b) and attrition (Evans et al. 2005; Wallace et al. 2015b). Rigor, quality, and examination processes of DBA theses have also been called into question (Kortt et al. 2016).

In exploring these issues, this chapter draws on evidence from two recent studies and other contemporary literatures focused on the DBA and doctoral programs. The first study (Pervan et al. 2016; Wallace et al. 2014, 2015a, b, c) was a generally qualitative investigation of DBA programs in 2013 where the 40 Australian public and private

universities' websites of the time were analyzed for DBA programs. This was followed by interviews with the Directors of Research/DBA Directors of those universities offering DBA programs. Subsequently, 27 DBA candidates and recently graduated alumni, including several living overseas, from 5 universities were interviewed (Wallace et al. 2014). In the second study, Kortt et al. (2016) have mined the *Higher Education Statistics* from the Australian government's Department of Education and Training presenting a longitudinal view of DBA enrolments from 1993 to 2013.

Rise, Fall, and Resurrection (?) of the DBA in Australia

From inception in the mid-1990s, DBA programs in Australia enjoyed fairly rapid growth. There were over 500 candidates across Australia in 1999 and 1500 in 2005 (Sarros et al. 2004; Kortt et al. 2016). However, in 2000, just 20 completions were recorded compared with 142 business-field PhD completions (Evans et al. 2005, p. 28), indicating slow rates of completion and attrition.

The rise in DBA numbers was short lived. Kortt et al. (2016) report that between 2006 and 2013, DBA numbers declined from 1461 to 869, with only 3 universities offering programs with over 30 candidates. Of the 17 programs in 2013, only 2 were non-compliant with the AQF, not having two thirds or more thesis component (Wallace et al. 2015a; Kortt et al. 2016).

Kortt et al. (2016) maintain that the DBA market has decreased by approximately 19%; 11 universities have left the DBA space, and they have not been fully replaced by the 7 universities that have commenced DBA programs. They also note that second-tier (35% in 2013) and regional universities (41% in 2013) have been the most active in the DBA space, with the remaining 16% held by universities of technology, Go8, and other institutions. Of these, only one Go8 university was still offering a DBA in 2013 (Wallace et al. 2015a).

Deans of Research and DBA Directors also reported on the decline in numbers of international onshore candidates particularly and the winding down of transnational DBA programs in countries such as Singapore, Malaysia, and Hong Kong. Kortt et al. (2016) attribute part of the decrease in overall DBA enrolments to this, rather than a decline in the market; in 2004, 972 enrolments overseas candidates made up 65% of all DBA enrolments, but from 2005 to 2013, the number of overseas enrolments halved to 53% (from 955 to 458). However, while there was a modest decrease from 549 to 411 in domestic candidate enrolments between 2006 and 2013 (Kortt et al. 2016), new enrolments to DBA programs have not been commensurate with completions and attrition. Furthermore, they suggest a continued decline as other universities exit the DBA space through concerns with course quality and transnational partner issues. Between 2004 and 2009, four universities were robustly critiqued by the Australian Universities Quality Agency (AUQA) regarding management, ability to offer quality supervision to large numbers of candidates, and offshore offerings of their DBA programs (Kortt et al. 2016).

Prognosis of the DBA's "fall" may thus be a little premature as at least two of the universities cited by Kortt et al. (2016) as cutting back enrolments or instituting a

moratorium on new enrolments are again taking or increasing new enrolments. The University of Southern Queensland has increased numbers since 2013 (personal communication, April 2016, Professor Ronel Erwee), and the SCU program has been relaunched (personal communication May 2016, Dr. Tania Von Der Heidt). While DBA numbers may not climb to levels commensurate with the mid-2000s, it appears that the DBA is being repositioned as a viable and relevant doctoral offering by some universities.

The DBA and the PhD

Academic managers such as Directors of Research Training and DBA Directors have reported that their DBA programs are perceived in the academy as poor relations to the PhD (Wallace et al. 2015a). There is also a prevailing view that "good students" would naturally opt to undertake a PhD. A telling example of this perception is that until the last 2 years, professional doctorate candidates were ineligible to enter the national level Three Minute Thesis competition. In contrast, a smaller number of academic managers view the PhD as too theoretical to be of immediate use in the business world and see value in the applied nature of the DBA. Recent concerns from industry, especially those employing the over 40% of PhD graduates who do not enter academia, that PhD graduates are very narrowly focused and do not possess professional or generic employability skills have prompted a reevaluation of the PhD (Group of Eight 2013; Manathunga 2012).

Kortt et al. (2016) do not appear to have considered that the DBA now faces more competition from the PhD. The need to impart generic employability and research has led to some universities offering coursework in their PhD programs (Kiley and Bell 2014), making them virtually indistinguishable from a DBA comprised of coursework and thesis. In addition, some universities, including the Universities of Sydney and Melbourne, have now relaxed their PhD entry criteria. Applicants with a coursework master's with a 25% or similar research component and less research training experience (i.e., no honours or research master's experience behind them) can be admitted to PhD programs. As PhD programs are almost always funded through government-funded Research Training Program (RTP) scholarships and DBAs have generally been full-fee paying, it is little wonder that some candidates have opted for the PhD route. It should be noted, however, that some universities do now give some RTP places/scholarships to their DBA programs (Kortt et al. 2016).

Somewhat paradoxically, there is little differentiation perceived between the DBA and PhD at some universities now that both awards are AQF10, and for this reason, some universities are moving out of the DBA market altogether.

Academic managers have expressed concerns about attrition and completion rates and acknowledged the tension between admitting candidates with the capacity to pay full fees but less academic capacity (Wallace et al. 2015b). These managers have also suggested that their DBA programs, especially in transnational contexts, have not been the revenue-generating ventures as anticipated because of costs and cash flow (Wallace et al. 2015b). Quality imperatives, especially in relation to supervision and

examination, have led to a decrease in transnational offerings, and the position of the Australian dollar may also have discouraged some potential international/transnational candidates.

Attrition and timely completion are fiscal issues for universities, as completions trigger government funding. Research into management education abroad indicates that thesis and dissertation requirements increase attrition and delay completion of postgraduate degrees (Armstrong et al. 2004). In 2013, academic managers in universities with DBA programs estimated DBA attrition rates of 30–50%, with a number of candidates who complete needing to seek an overtime arrangement, the most common reason given by Australian HDR program directors being the candidate's underestimation of the time commitment involved (Wallace et al. 2015a). While some DBA candidates cope well with the coursework elements of the DBA, in terms of deadlines and "chunk-able" assignments, attrition is more likely to occur at thesis stage. Speculative reasons given for this lack of success have included candidates often studying part time, underestimating the work and time required, problems with program management, limited workplace understanding of the DBA's value, and poor-quality candidates (Evans et al. 2005). It should be noted, however, that over the years, there have been a number of concerns raised over attrition of around 30% and timely completions in PhD programs as well (Bourke et al. 2004; Group of Eight 2013).

Those universities who were exiting the DBA market reported that they were doing so on the grounds of quality issues, and the ability to supervise large numbers of doctoral candidates, with fiscal issues a subsidiary reason (Wallace 2015a). Rationales for continuing to offer a DBA included the uniqueness of the degree and its appropriateness for practitioners, as it linked complex problems in the business world with high-level research qualifications, it directly relates to professional work life, it provides a solid foundation in research skills, and it gives business professionals a theoretical and empirical understanding to enable them to resolve business challenges (Wallace et al. 2015a). Some managers also commented that the presence of the DBA in the business school's suite of offerings had revitalized the research culture through an integration of DBA and PhD candidates and contributed to publication outcomes. Comments such as the following express this optimism:

> In the past we were overly generous in admitting candidates that would not be admitted now. Now we can be confident of the skills and capacity of our graduates . . . Now we have DBAs taking out the university medal. (Wallace et al. 2015a, p. 40)

Other academic management issues that emerged related to differences in examination practices between the DBA and PhD, such as the number of available examiners and instructions to examiners, lack of ability for DBA candidates to access some higher degree research funding for conferences, and lack of input from industry to DBA programs. There is scant information on how the DBA is perceived by industry. Several academic managers have stated that in Australian industry, the DBA "brand" was not well known and that the academy does not get feedback from the marketplace on the value of the DBA (Wallace et al. 2015a).

Others have expressed concern regarding the lack of academic research into the perceived value of the DBA in industry (Wallace et al. 2015a). Given the lack of evidence regarding the DBA's perceived value in the commercial world and the evidence that candidates may receive limited or no support from their employers for such a time-consuming activity, universities may benefit from further data gathering from the employers of DBA candidates.

In summary, the clarification by the AQF of the status of the DBA appears to have prompted some universities, at least, to view their DBA program as a different but viable doctoral pathway well suited to practitioners. While a number of universities have indeed ceased offering a DBA, some universities have reevaluated and enhanced their DBA programs in the light of scholarly literature, practical experience, and a continued demand (Wallace et al. 2015a). The marketplace appears to remain somewhat volatile, and no doubt there may be further exits and entries to the DBA space; there may even be doctoral programs badged as professional PhDs (Pervan et al. 2016). While the number of DBA candidates, especially in transnational programs, may have dropped, there is an increased emphasis on admission standards, coursework, thesis supervision, and examination (Wallace et al. 2015a, b, c). Also, universities continuing to offer DBA programs need to interrogate their policies and practices within AUQA guidelines to better understand the market, industry, and candidate needs and structure their DBAs programs to fulfill them more effectively.

Nevertheless, the inevitable comparison of the DBA with the PhD continues. It has been identified that managers, supervisors, and some candidates struggle with different expectations and understandings of what constitutes a DBA in comparison to a PhD; a dichotomy in expectations by academic gatekeepers between the applied nature of the degree and the academic expectations of an AQF level 10 thesis has also been identified (Wallace et al. 2015a, b, c). The following section focuses on some defining elements of the DBA.

Purpose of the DBA

The DBA is designed to make a significant contribution to enhancing professional practice in business administration by researching real business issues through a critical review and application of appropriate theories and practice (Sarros et al. 2007). Manathunga et al. (2004), in their study of 30 professional doctoral programs in Australia, suggest that the three main aims of doctoral coursework are a thorough grounding in the disciplinary literature and the debates within the discipline, skills in reflective practice including new ways of thinking about professional practice, and research skills.

The foremost difference between the DBA and the PhD previously identified is that the DBA provides more applied outcomes. Additionally, as has previously been established, the entry pathways and career trajectories of both groups of candidates are different (Wallace et al. 2014, 2015a, c). Until quite recently, another difference was that a formal component of the DBA is the coursework designed to develop in

the candidate the research skills and scholarly perspective needed to become an independent researcher. This difference is now less apparent.

Course Structure

In their research on doctoral program structures, generally, and in the light of the proposition to add coursework to PhD programs, Kiley and Bell (2014) have found discrepancies between institutions as to perceptions of what constituted coursework content and pedagogy. However, they suggest that there is general agreement that coursework should include research processes, advanced discipline-specific knowledge, epistemology, research integrity, and ethics, contextualizing and conceptualizing research and "employability" skills such as project management and communication skills. There is also debate over the skills to be taught at different stages, the best way to learn them, the most effective ways to interact with supervisors and peers, and the amount and method of training. Some universities program coursework at the beginning of the candidature, while others run coursework throughout candidature (Kiley and Bell 2014).

Manathunga et al. (2004) have developed the typology of professional doctorates summarized below:

1. *Parallel/non-integrated models* have coursework that can be linked to the research component in a self-directed manner, but the completion of both coursework and research components is in parallel.
2. *Parallel/integrated models* have coursework and research components operating in parallel, with particular student outputs (e.g., seminar, research report) required at certain intervals as part of a course, in order to check on research/thesis progress and provide feedback on progress *or* have some coursework components feeding directly into the research component through required subjects/tasks such as a research proposal, literature review, or research report. Assessment tasks can be planned so that candidates focus on their chosen thesis research. In these models, some form of coursework is undertaken throughout candidature.
3. *Sequential/integrated* models have coursework and research/thesis components completed consecutively, with some subjects/tasks feeding into the research/thesis. For example, students may complete courses on research methodology, statistics, literature review, and critique or courses that help develop advanced knowledge required for the research topic area. This is essentially a front-on model where candidates complete coursework before moving on to the thesis. However, a practice dimension may also be evident where small research projects are undertaken, with one of them chosen to be expanded for the research leading to the thesis.
4. *Preparation/non-integrated* models have coursework in the first part of the program that could be related to the research/thesis component, but only in a self-directed manner (e.g., courses on methodology or professional knowledge with no planned linkages, such as assessment tasks or non-assessed learning activities) (summarized from Manathunga et al. 2004, pp. 240–243).

Manathunga et al. (2004) found most professional doctorate programs for business and commerce in Australia had sequential designs. The 2013 review of DBA programs in Australia indicated that all of them comprised coursework and thesis (Wallace et al. 2015a, b). Typically, coursework was seen to cover research methods and philosophy, research planning, data gathering and analysis, approaches to reviewing literature, research proposal writing, and, in some cases, developing a journal article. During the final two full-time equivalent years of study, candidates undertook a research project and produce a thesis (usually 50–60,000 words compared with the PhD standard of 80–100,000 words), which demonstrates the candidate's contribution to both theoretical knowledge and professional practice. The AQF requires a professional doctorate thesis to comprise at least 66% of the total course workload (AQFC 2013, p. 63).

In 2013, only two universities required a thesis component of less than 66% of the award, thus making them non-compliant with the AQF; at least one of those courses has now been discontinued (Wallace et al. 2015a). The remainder of universities generally viewed the first full-time equivalent year (33%) of the DBA as a time for coursework that scaffolds the skills needed for the thesis component taken over the ensuing 2 years (or part-time study equivalent). This research did not examine the degree of integration of coursework and thesis.

DBA Candidate Demographics

Overall, the profile of doctoral candidates in Australia indicates an increase in age since the 1990s. While the average age for a PhD student is now around 33 (Group of Eight 2013), DBA candidates tend to be somewhat older, with an average age in the early 40s (Wallace et al. 2014). However, research also indicates a number of DBA candidates in their 50s and 60s commensurate with their work experience, seniority, and aspirations, as outlined below. In some programs, the gender breakdown is only 20% female, while in others there was gender parity (Wallace et al. 2015a, b). Overall, there were at least twice the number of men than women in DBA programs (Wallace et al. 2015a, b).

Many DBA candidates do not have the academic capital of more traditional research students (Pervan et al. 2016), and their needs, expectations, and career trajectories are varied. Most domestic DBA candidates are in the full-time workforce, and a large number are not located "on-campus" in the traditional sense. A good number are middle and senior managers, often with more depth and breadth in work experience than PhD students (Pervan et al. 2016). The typical DBA profile is one of a part-time candidate actively involved in professional practice, who finds it difficult to fully acculturate to the university environment (Bourner et al. 2001). This factor is particularly pertinent to part-time, distance, or transnational candidates who rarely, if ever, enter the physical campus of their university.

Another important factor in cohort diversity has been the development of higher education as an important service sector export. For example, the proportion of international commencing PhD students in the total Australian cohort increased from 21% in 2002 to 37% in 2011, when there were 7,147 domestic commencing PhD

students at Australian universities and 4,167 commencing international students (Group of Eight 2013).

International and transnational DBA candidates come from a wide range of cultures and linguistic backgrounds. Transnational candidates undertake their DBA even more remotely from the university through which they study. International and transnational candidates come from a range of Asia Pacific nations including Singapore, Malaysia, Thailand, Vietnam, Hong Kong, Indonesia, the Philippines, and Tonga with countries such as the USA, Canada, Switzerland, Germany, Iran, Bhutan, Kenya, Nigeria, Sri Lanka, and Saudi Arabia also represented (Wallace et al. 2014).

While some international students had been funded by scholarships from their home country or the Australian government and some transnational students had fee subsidies (e.g., from the Singaporean government), most domestic and transnational candidates appeared to be self-funded; only 6 of 27 candidates interviewed were sponsored by their employers (Wallace et al. 2014). With full fees running to a minimum of around AUD40,000 (more for international students), this represents a considerable investment.

While international, on-campus PhD and DBA candidates may have similar country of origin profiles and access to the academic capital of a university, anecdotal evidence suggests that transnational DBA candidates may have higher levels of workplace experience, but less access to academic capita. Some are supervised by Australian academics who travel to candidates' country of residence to run workshops and supervise, and in some cases, "local" supervisors work with candidates in addition to a supervisor at the awarding university. These supervisors and candidates may meet infrequently in person. There is thus much greater risk of candidates feeling cut off or abandoned by supervisors. In addition, adjunct, local supervisors in the overseas country may not be strongly linked to or receive professional development from the "parent" university. Previous research on transnational higher education indicates that offshore academics may feel left out of its community of practice with academic staff at the "head office" (Mahmud et al. 2010).

DBA candidates have a diversity of occupational backgrounds, including CEOs and general managers, middle managers, consultants, and senior professionals, or, for example, backgrounds in law and accounting (Wallace et al. 2014, 2015c). Compared with PhD candidates, professional doctorate candidates have more industry experience, are motivated by practitioner career aspirations, and are much more frequently part-time candidates in full-time, paid employment. The senior roles of some DBA candidates require long working hours and travel (Pervan et al. 2016; Wallace et al. 2014). They already possess generic employability skills but are more likely to experience a sense of social and intellectual isolation (Wallace et al. 2015b, c). In contrast, PhD candidates may have the additional educational capital to undertake a research degree, but they may yet need to acquire the career capital and work experience that gives them employability skills now required of such graduates (Kiley and Bell 2014; Go8 2013). PhD candidates are also more likely to be full-time, are more socially and culturally integrated into academia, and are motivated by academic career aspirations (Bourner et al. 2001).

Candidate Motivations and Entry Pathways

DBA candidates have cited their motivations to undertake a DBA, including the wish to progress formal learning beyond an MBA, to acquire a doctorate or career advancement, or to consolidate and make sense of experience in a systematic way (Wallace et al. 2014, 2015c). Others, however, suggested alternate, more intrinsic motivations such as personal fulfillment and sense of accomplishment. Candidates commented that their attraction to the DBA was overwhelmingly the applied nature of the degree and its applicability to their workplace in comparison to the more theoretical PhD (Wallace et al. 2014, 2015c). The coursework element and the perceived relatively shorter length of the DBA thesis and the time to complete it were also attractive. Comments from candidates included:

> A DBA is trying to create applied knowledge…. [t]o a particular business problem'; 'It (the DBA) is about advanced thinking and theory within the business environment. It has to be REAL for industry right now. A PhD may not be relevant for many years.' (Wallace et al. 2014, p. 19)

Almost all interviewees in this research were admitted to a DBA program with an MBA or similar master's by coursework qualification and possessed the increasingly varied backgrounds and expectations previously identified by others (Group of Eight 2013). These candidates reported that their previous studies (bachelor's and master's by coursework) had not prepared them for the rigors of doctoral candidature, and, while they had expected to write a thesis, many had not anticipated the hard thinking, writing, and time commitment involved (Wallace et al. 2015b, c).

A review of the 18 DBA programs on offer in 2013 (Wallace et al. 2015a) indicated inconsistent entry requirements, with some universities drawing from the pool of MBA graduates, many of whom work in middle- or upper-level management. It also found that while enrolments were trending downward in numbers, there were higher standards and various perceptions of the DBA. Initially, some Australian business schools had less stringent requirements for entry into DBA programs than they do now, and university reputations were perceived to be at risk. Several institutions offer some advanced standing for a completed MBA, while others see the DBA as an "end-to-end" degree only after the MBA is complete.

Transitioning the Gap Between Coursework and Thesis

The transition from coursework (where the candidate essentially depends on a prepackaged learning framework) to independent learning (where the candidate analyzes disciplinary knowledge to conduct original research and create new knowledge) is important and under-researched (Manathunga et al. 2004). As mentioned, the main difficulties DBA candidates experienced related to the thesis aspect of the DBA. While candidates were in the coursework component with assignment deadlines, they reported feeling supported in a structured environment with a community of fellow candidates. However, producing the thesis itself was something of a

struggle for some. They were unsure of what was required and reported that they felt suddenly adrift in a less structured environment (Wallace et al. 2014, 2015b). Rather than being in a coursework class, virtual or otherwise, in the thesis stage, candidates were in a one-on-one relationship with a supervisor, usually someone they had not encountered through the coursework component (Wallace et al. 2014, 2015b). This confirms Morley's (2005) assertion that professional doctorate candidates initially have different skill sets to PhD students and find the thesis component quite daunting. The part-time and distance nature of the candidatures, international travel for work, and, at times in some countries, Internet connectivity issues were hindering factors (Wallace et al. 2014).

It appears that candidates perceived a definite gap between the coursework and thesis component, wanting more direction and support in the thesis stage, and contact with supervisors and a community of practice with other DBA candidates. The transition from coursework to thesis and the ongoing development of the thesis were major challenges for the candidates, confirming Manathunga et al.'s (2004) finding that the transition phase needs to be managed with care.

Supervision Matters

Supervisors, however, were less attuned to the coursework-thesis gap, and some expressed the need to take a less hands-on role with DBA candidates because of their considerable industry experience (Wallace et al. 2015b). While supervisors saw that the difference between a DBA and PhD needed to be more specifically delineated and acknowledged that their own supervisory training had been through their own PhD candidature and subsequent supervision, they appeared to assume that candidates had acquired discipline knowledge, research, and writing skills in their coursework to complement their current business knowledge. Supervisors perceived that their roles were to guide, facilitate, and advise the candidate through the processes of research and writing the thesis. Only one saw the relationship in terms of master and apprentice, where skills as well as knowledge were imparted.

At a practical level, there remain considerable variations in DBA supervision, including philosophical approaches, expectations, and experiences. These variations are reflected in concerns regarding supervision models and attrition rates at the thesis stage (McCarthy 2012). Research with doctoral students supports the view that supervisory experience is an important factor in contributing to candidate satisfaction and decisions to drop out (Fergie et al. 2011; Sakurai et al. 2012). Generally speaking, the main task of the supervisor is to provide technical and emotional support. The purpose of supervision, according to Sambrook et al. (2008, p. 71), is to "steer, guide and support students through the process of conducting a doctorate." This is a long and complex process with multiple phases.

The growing acknowledgment of the differences between the PhD and professional doctorates as regards candidate academic capital, work experience, and career trajectory requires a different approach to the "apprenticeship" model of the traditional PhD where the supervisor is the expert and the candidate the novice (Carr et al.

2010; Erwee 2004; Morley 2005; Manathunga et al. 2004; Manathunga 2005). In the case of the DBA, the candidate generally has greater knowledge and experience in the practicalities of their area of research than their supervisor; thus, the supervisor is not necessarily the main source of knowledge and guidance on this aspect of the research project as Morley (2005, p. 113) suggests:

> The features of the DBA mean that it is not necessary that the senior supervisor is an expert in the subject or topic of the research. . .The DBA supervisor is more required to be an expert in doing research and knowledgeable about doctoral standards. (Morley 2005, p. 113)

However, Morley's statement and views of supervisors cited above seem at odds with what some candidates have expressed regarding the coursework-thesis gap. There is an articulated concern about actually dealing with discipline knowledge, methodology, and writing up their thesis. The supervisor's ability to provide advice on the format and structure of the thesis has been rated by doctoral candidates as the most important factor in their supervision (Morley 2005), but it has been found that the challenge of transitioning from student to researcher/academic (and of thesis writing) was often undertaken with little direct input from a supervisor (Fergie et al. 2011). It appears that in some cases, the coursework in a DBA program has not fully prepared candidates for the thesis writing but that some supervisors presume that their candidates were adequately prepared for this task.

Additional issues can occur when a transnational supervisor is in greater physical proximity to that candidate. Manathunga (2009) has suggested a tension lies at the heart of the supervisor role between mentorship and providing rigorous critique. Supervisors from some cultural backgrounds that avoid open disagreement, who are not comfortable with a western culture of critique, may find this difficult to achieve. Similarly, these supervisors may also find it difficult working in a supervisory team with a western-attuned colleague whose intercultural communication skills are still developing.

There is also a potential conundrum at the heart of DBA supervision that may apply to supervisors from any culture. DBA candidates are highly competent in their practice field and are generally in middle and senior management positions (Morley 2005).Their professional and real-world knowledge in relation to their topic is often more than that of their supervisor (Wellington and Sikes 2006). This more equal power relationship may, in some ways, account for the seeming preference of thesis supervisors to be coaches, or at arm's length from the candidates. This raises the questions of whether deference is being given to candidates' real-world experience or whether supervisors are not imparting discipline and methodological knowledge for other reasons.

Socialization into the Academy/Socialization of the Academy

One of the main reasons that candidates leave their doctoral program is that they have not been appropriately socialized into the discipline and institution (Golde and Dore 2001). The primary agent for socialization is the faculty (mainly supervisors) and how they assist

their students to integrate and socialize. After interviewing 68 former doctoral students who had not completed their initial program, Golde and Dore (2001) have argued that a supportive advisory relationship is central to a successful and timely completion.

There are both individual and contextual factors involved in socialization to the academy. Within the microenvironment of the department, supervisors, and peers, Lovitts (2006), configures creativity (knowledge of the domain and innovation in that domain), intelligence (analytical, creative, and practical), knowledge (formal knowledge and disciplinary skills), thinking styles (including metacognition and self-awareness), traits (e.g., self-discipline, perseverance, internal locus of control), and motivation (particularly intrinsic motivation). These, in turn, are encapsulated by the macro-environment of the culture of postgraduate education (community of practice).

The challenge for DBA program managers and supervisors is to translate such models into supportive structures, relationships, and communication suited to part-time, distance, and transnational candidates, who are more likely to be full-time workers with practitioner mind-sets.

Potential issues of "goodness of fit" between the mental models and ways of approaching knowledge relevant to a DBA thesis have also been identified. Drawing on Scott et al.'s (2004) *Four Modes of Knowledge*, Pervan et al. (2016) argue that while certain modes (e.g., Mode 1 Discipline Based and Mode 4 Critical Knowledge) may be a good fit for the academically trained supervisor, other modes (e.g., Mode 2 Technical Rationality (technical problem solving) or Mode 3 Transdisciplinary and Dispositional (reflection in action)) may fit with the practitioner candidate's background. While this brief summary does not do justice to Pervan et al.'s (2016) argument, it does highlight that supervisors and candidates may approach research with different ways of knowing and may thus be traveling on different paths without realizing it. The supervisor might steer the candidate toward the mode that they, as a supervisor steeped in discipline knowledge and critical thinking, are most comfortable with and skilled at supervising (and feel that an examiner would also be more comfortable with) leaving the candidate struggling to see the relevance of such an approach for a piece of research with problem-solving application.

Socialization of candidates and goodness of fit are not a one-way street, however. The academy also needs to be socialized into to the needs of industry and practitioners so that candidates are not obliged to adopt approaches that they are uneasy with. While the academic gatekeeper role regarding standards of *rigor* must be upheld, the standard of *relevance* in a practitioner context is also highly pertinent (Shrivastava 1987) to DBA studies. There is evidence of positive outcomes for doctoral candidates whose rigorous scholarship more closely relates to an industry they can become immersed in during their candidature, such as CRC projects (Manathunga et al. 2012).

Another area of socialization in the academy relates to examination. Kiley (2009) advocates that potential examiners understand the system from which the thesis comes, as well as being an outstanding scholar in the field of the thesis, and recent experience in academia and in examination. In the case of a DBA thesis, an examiner would need to know the scope and purpose of an Australian DBA thesis, and their experience in examining DBAs would be relevant. There is thus a need to distinguish a DBA from a PhD for potential examiners.

Finally, socialization also implies that candidates have opportunities to develop mutually supportive and intellectually stimulating relationships with each other. This poses a significant challenge to DBA programs where the majority of candidates may be part-time, distance learners and some supervisors may be adjunct academics.

Designing DBA Policies, Structures, and Practices to Promote Candidate Success

The issues discussed above raise more questions than answers. The following suggestions for improvements in policy and practice are not prescriptive or exhaustive. The authors acknowledge that some universities may be already doing or planning some of these activities.

Addressing the Legitimacy/Image of the DBA

Fundamental to a university establishing or continuing a DBA program is resolution of the tensions inherent in offering an applied doctorate within AQF compliance. A clear articulation is needed by the business school and university of the purpose and nature of the DBA. In addition, a further explanation is needed of the AQF definition of doctoral rigor and relevance to professional practice, so that academics and potential candidates understand the unique qualities of the award.

Those charged with the management of a DBA program could be part of academic governance, sitting on the relevant university higher degree committees or similar. Allied to this approach is the need to develop quality standards for managing the DBA program equivalent (but not necessarily identical) to PhD processes, such as standards and processes for appointing supervisors; supervisor-candidate ratios; supervisor development and registration; development of a community of practice among supervisors, including adjuncts wherever located; information for prospective candidates on supervisory expertise; confirmation of candidature; progress reporting; information given to examiners about purpose and standards of the award; dealing with examination reports; and so on. In relation to examination, it could be useful if universities articulated the latest trends, expectations, and context for examining DBAs. Given that both the DBA and PhD are now AQF 10, it could be useful to identify which assessment criteria are relevant to each and which are unique to the DBA. Delineating these criteria might ensure consistent and coherent standards for both awards.

Such examination criteria also beg the question of entry standards and the purpose of the DBA within a system based on what Lovitts (2001, p. 21) calls "the selective admissions myth," where only those who have already proven themselves the most able are identified and selected. Manathunga et al. (2005) suggests that this process selects for existing academic talent rather than seeking to develop it. As the purpose of the DBA is to give practitioners the opportunity to learn research skills, look at the world through different eyes (modes of knowledge, paradigms), and

produce high-quality and relevant research, surely it is the role of the academy to select for promise rather than current academic skills and then help develop DBA candidates. Good coursework grades do not necessarily predict self-efficacy in thesis stages (Lovitts 2006). Business schools could look to factors besides academic results such as project management skills (managing the thesis as a project), experience in workplace research, evaluation or evidence-based practice, articulated realization of the hard slog needed to complete and time management skills, proactive behavior, and openness to new ideas and ways of problem solving (candidates may come with not only their research project in mind but also "know" the solution). Thus, some triangulation through interview, references, or portfolios of their non-academic work or writing would be helpful, even if not foolproof.

Australian government policy in higher education, immigration, employment, and the economy has significant impacts on universities. This complex interaction is indicated by the problems Australian business schools faced when policy changes in 2010 became evident in subsequent years. A "perfect storm" of changes to student visas, the value of the Australian dollar, and other factors witnessed a sudden and dramatic drop in international student numbers in Australian universities (Marginson 2015). There has been little analysis of the impact of these factors on the Australian DBA. Nonetheless, there are implications for universities and program managers' business acumen in terms of the Australian dollar, the politics and economy, and the need to ride the "roller coaster" (Marginson 2015, p. 1). These are significant challenges for DBA program managers and those further up the hierarchy to grasp and act on, to be effective in the new university context.

Evidence suggests that some universities have opted out of DBA programs owing to the lack of any apparent advantage of the qualification over the PhD. An alternative is that universities opt into a DBA program because of the unique benefits, pathways, and industry engagement possibilities that it provides for business schools. It seems likely that industry would feel comfortable with the DBA and value its unique potential for addressing practical problems in a rigorous but applied manner. In any case, program managers, business schools, and universities could be very clear about their strategy around the DBA and PhD, drawing on the distinctions made here.

At the most practical level, in recognition of the high standing of the DBA established through the collegiality discussed above, universities could reexamine their policies and practices regarding the support of DBA candidates. More universities could consider offering RTP places to domestic DBA candidates and offer financial support to attend conferences and other research-related activities, commensurate with the support offered to PhD candidates. Of course, this would need to be accompanied by a reevaluation of revenue-generating activities at the business school and university level; some universities already manage RTP places alongside fee-paying places. This appears to be a practical strategy for universities to support and promote the DBA. It would be useful to understand the circumstances whereby universities allocate RTP to DBA candidates. It would be of value to DBA candidates to be financially supported, given that at least two thirds are self-funded. More information about when, how, and which universities use RTP scholarships to support DBAs would inform program managers, universities, and candidates on the possibilities of being supported by RTP.

Australian government grants for ARC research divide pure (Discovery) research from applied (Linkage). In the business space, scholars are more likely to be successful with Linkage applications. The recent focus in business schools on engaging with employers and industry could be used to secure funding for DBAs. Applications for ARC Linkage grants could include provision for DBAs, as they are uniquely positioned to facilitate the partnership with industry that is a key requirement of these Linkage grants.

The Australian DBA Beyond Borders

The field of transnational DBAs is challenging, as evidenced by Kortt et al. (2016). At present, the DBA is offered by a select few Australian public universities, perhaps only those who survived the process of rigorous external academic review. Consequently, this remains a substantial field of opportunity for Australian DBAs, given that the need for Asian and other non-western nations to develop internal research capacity has not diminished (Paul and Long 2016) despite internal Australian issues with DBA quality. The DBA program needs to find new ways of going forward in the Australian, international, and transnational space. Now that the Australian DBA has been formalized, recognized, and clarified in the AQF and within individual universities, the opportunity presents to reenter the international and transnational markets in a measured way with well-ranked university partners and improved, more rigorous, and effective modes of operation, including professional development for all offshore, adjunct supervisors and clear and regular supervisor meetings using communication technology.

Promotion and Marketing of the DBA

In terms of Australian government policy in higher education, AQUA will continue to ensure the standing of the DBA under the quality assurance umbrella. Therefore, program managers and others could use this development to assure their colleagues and the institution of the quality and standing of the DBA. This in turn may solve the problem of the DBA being seen as the poor relation. Advice for marketing the DBA from Ellis and Anderson (2009) was compiled from research conducted before the changes to the DBA and its elevation in the AQF described here. Nonetheless, the advice to ensure a high standard of comprehensive information on university websites could be augmented with an explanation of how the DBA fits into the AQF and its standing at the highest level of Australian qualifications. University DBA websites could convey this information and include links to the AQF.

As regards marketing the DBA, the mentioned typical DBA candidate profiles, as older (40) and often experienced professionals, could be provided to help potential candidates identify with the cohort. If candidates could access recordings of graduations with all their pomp and ceremony and the respect attributed to DBAs (and PhDs) in various university systems, this might serve as an additional motivation toward completion. Supervisors could also be given this information, in order to

understand their candidates. If this information was publically available, with case studies of successful candidates on university webpages, all parties concerned would have a better apprehension of the candidates and their situation, needs, and strengths. Instead of accepting DBA candidates as second-rate PhD candidates, they may be accepted as wise practitioners who need specific direction in the protocols and culture and of academic university research.

Addressing the Coursework-Thesis Gap

Manathunga et al.'s (2004) typology of coursework structure could be a useful tool for the development or evaluation of coursework. While most coursework programs already have some integration with the thesis (Manathunga et al. 2004), it may be preferable to have a curriculum design of parallel coursework, which is ongoing though the research and writing of the thesis, or at least for the first 2 years (or part-time equivalent) of thesis development, rather than having front-on coursework that imparts skills in a more isolated way. Furthermore, linking coursework assessment to the actual research project already chosen as it progresses from literature review to thesis writing may also provide an appropriate bridge for the identified gap. Scaffolding of concepts and skills within coursework could be another way to further bridge the gap (Manathunga 2005; Manathunga et al. 2004), rather than assuming that candidates already know how to define their topic, read research, and write research.

Integrated parallel coursework that directly teaches how to define and refine a research topic and analyze its "do-ability" could be appropriate. One model for such teaching could be Yaghi's (2008, p. 4) *Research Pentathlon* of 11 steps to refining the research topic, informed by Shrivastava's (1987) work as follows:

1. Broad research issue/topic derived from professional practice
2. Immersion in the (multi)disciplinary knowledge that is related to the broad topic
3. Immersion in reflective practice and critical thinking (including theoretical lenses such as critical or post-structuralist theory) that can problematize/more deeply analyze the topic
4. Immersion in the "business" of academic research – contacts, administrative requirements, project management, and reporting
5. Immersion in a community of practice of fellow scholars and academics
6. Critical analysis of the literature leading to identification of a research gap
7. Decision as to whether the research gap is interesting and researchable
8. Development of a focused research question
9. Decision as to the importance of the research/its potential contribution to knowledge in the context of professional practice
10. Development of a theoretical model
11. Development of research design and methods

A key question, however, concerns the impact of the research and whether it is both rigorous and relevant (Yaghi 2008). This question is crucial to the aims and

purpose of the DBA and merits consideration by candidates and supervisors. Much of what has been described in this chapter pertains to an overall Australian government focus on research quality. Now that a research quality framework and associated metrics have been bedded down, the next phase to be addressed is research impact, following developments overseas (Smith et al. 2013). This is where the DBA has the potential to claim a preeminent place in the nexus between quality and impact, and the DBA could be positioned and promoted to this end. For example, the panel convened for confirmation of candidature could well have industry as well as academic membership to help reflect on the impact question.

In addition, just as research paradigms and methods are directly taught in DBA coursework, direct teaching of the skills of literature search and analysis of sources, discrimination and critical reading of journal articles and other research outputs, and scholarly writing may be needed. Often candidates are directed to library or learning assistance staff for these matters, often in a quite informal manner. However, incorporating the skills of allied staff alongside academic staff in formal structured coursework that directly teaches skills and links them to individual candidates' research projects could help to bridge the coursework-thesis gap and apprise candidates of the ongoing academic support opportunities open to them. Supervisors have a role in explaining and reinforcing research protocols and standards through a primarily functional role, particularly in the early stages of the thesis, in the case of PhD supervision (Lee 2008). Similarly, in the case of DBA supervision, candidates may need more time or more support to become independent researchers. Lee's (2008) remarks about the functional role of the supervisor may also be pertinent for DBA candidates, who may be better prepared to undertake the project management aspect of their role but may need more support in the scholarly academic aspects of research. Lee (2008) found that a good relationship between candidate and supervisor is key. There is no difference here between the PhD and the DBA.

Several strategies could further support integration of coursework and thesis. If the coursework is more parallel and integrated, supervisors could be involved in that coursework, helping to refine the topic, setting and marking assignments related to the topic, and preparing their candidate for confirmation, which could occur after 1 year's full-time or equivalent candidature.

Addressing Supervision Matters

Universities have moved to formalize supervisor training especially in terms of "supervisor/candidate relationships, clarification of various expectations, milestones and monitoring, roles and responsibilities of supervisors, candidates and institutions and policies" (Kiley 2011, p. 585). DBA supervisors have themselves most often come through a PhD pathway, so some professional development on the DBA and its requirements for rigor and relevance in the professional practice context could be helpful.

Many academics do not have business practitioner backgrounds, and the DBA candidates that they supervise may well have a greater depth of practitioner experience. How then to supervise a DBA candidate? There is a risk that academics may

rely solely on disciplinary and methodological knowledge rather than practice knowledge and unconsciously steer candidates toward what may be regarded as a "PhD lite" rather than a doctorate with practitioner and industry impact. As noted, supervisors may be reluctant to advise DBA candidates who are senior professionals, yet these senior professionals are not inculcated into the culture of academic research and writing. Supervisors could be respectful of candidate's experience and expertise in the applied context and simultaneously be somewhat directive about how to write a rigorous academic thesis that will meet AQF, university, and program manager expectations. Involvement or advice from industry members of a business school's advisory board could offer industry relevant insight for supervisors. In some cases, there could be an argument made for a suitably qualified industry expert to be a member of a supervisory team.

In addition, specific training programs could be developed to inform supervisors of the unique demographics, motivation, and challenges of DBA candidates, informed by the material presented in this chapter. The Australian DBA candidate has become better known, and this new knowledge could be promulgated through professional development for DBA supervisors, which could build on Miller's (2009) existing work. Further, this training could be extended to reflect that the DBA has been embraced by universities' central research units with more consistent and exacting approaches to supervision and examination.

Supervisors' ability to provide advice on the format and structure of the thesis was rated by candidates as the most important factor in their supervision. This underscores the importance of developing agreed standards for the format and structure of the thesis at the appropriate level within and across Australian universities and business schools.

Addressing Socialization Issues and Other Implications for Candidates

For DBA candidates, an important practical implication is the development of skills for articulating the value of the DBA to their current and prospective employers. This would serve to educate industry about the value of the DBA and may assist candidates to gain more support (financial and otherwise) from existing employers. New knowledge provided in this chapter about the nature, contribution, and practical application of the DBA could be used to support this strategy. It has been noted above that PhD candidates may need more training in employability skills, whereas DBA candidates generally have these skills. Therefore, the practical implication is for DBA candidates to identify and articulate how their research qualification enhances their employability. This could be framed in terms of the move to evidence-based practice in business and management (Rynes et al. 2007).

Further, ensuring that DBA candidates publish their research, with due support and direction, could increase the value attributed by employers and others to the DBA qualification (Meredith 2012). This may particularly be the case for publication in journals utilized by both practitioners and academics (Marchant et al. 2011).

Ample and well-informed advice for doctoral writing and publishing is available in the literature (Aitchison et al. 2010), but refining and adapting this advice for the unique, applied focus of Australian DBA candidates may be implicated.

Supervisors have a critical role in socialization of DBA candidates (Golde and Dore 2001). This socialization relies on supervisors' and candidates' ability to form an effective, warm working relationship, which in turn requires emotional intelligence from both parties (Lee 2008). The debate about the advantages and disadvantages of contemporary, technology-based modes of research supervision in higher education, as compared with face-to-face modes, is echoed in the broader education literature, as technological modes gain recognition as useful support tools and are taken for granted in higher education space (Dabbagh et al. 2016). Done well, this may have potential for socialization and bridging the coursework-thesis gap, with appropriate modifications for the DBA context. The challenges include how to enculturate candidates and supervisors in a virtual world, perhaps through blogs and interactive classrooms. Unlike large-scale undergraduate coursework programs, the DBA model could be organized around smaller numbers and pods that progress through the course together as cohorts.

A major challenge for supervisors is the nurturing of metacognitive skills and reflection in candidates so that the "hidden" curriculum is made visible. This could be achieved by eliciting discussion of such candidate questions as "What underlying assumptions or ideas are helping or hindering progress?," "What am I learning in terms of skills and process and where do I need to go from here?," or "How is our supervisory relationship going?." This kind of learning might be captured in a reflective journal for the candidate, along with written reflection from supervisors in addition to formal progress reports. There may still be a need for focus on participation issues, and supervisors could take an active role in advising on the practical application of DBA research.

Finally, gender issues have been noted, in that women do not feature highly as DBA candidates. This could be partly addressed by promoting the DBA through senior women's business networks in Australia. Given the recent quality issues around the DBA, gender has not been a major focus. However, discussion of scholarly literature on the status of women in higher education (Marchant and Wallace 2013) could be applied to this particular domain. It is understandable that given the other issues of quality, rigor, and completion, gender and other diversity matters have not been largely addressed. However, now that the DBA is positioned firmly in the AQF, there is scope to move on toward researching significant practical participation challenges.

Conclusion

New knowledge about the DBA qualification and programs reported here clearly positions the DBA in a certified quality framework. Once the tensions between the PhD and DBA have been resolved, the DBA might benefit from more integration into existing university and government protocols, policy, and process. Industry

perspective and involvement could be addressed further but seem key to anchoring the DBA in applied relevant research, ideally with support from the RTP. There is scope for the DBA to be offered in the international and transnational space, but this must be approached with caution, informed by awareness of the implications of Australian government policy. Scaffolding is needed from existing practice around PhD supervision, socialization, and writing, to DBA concerns including the coursework-thesis gap that may be bridged by suggestions here.

References

Access Economics. 2010. *Australia's future research workforce supply, demand and influence factors*. Canberra: Department of Innovation, Industry, Science and Research.

Aitchison, C., B. Kamler, and A. Lee, eds. 2010. *Publishing pedagogies for the Doctorate and beyond*. Milton Park: Routledge.

Armstrong, S., J. Allinson, and J. Hayes. 2004. The effects of cognitive style on research supervision: A study of student-supervisor dyads in management education. *Academy of Management Learning and Education* 3: 41–43.

Australian Qualifications Framework Council. 2013. *Australian qualifications framework*. Adelaide: Australian Qualifications Framework Council.

Bareham, J., T. Bourner, and G. Ruggeri-Stevens. 2000. The DBA: What is it for? *Career Development International* 5 (7): 394–403.

Bourke, S., A. Holbrook, T. Lovat, and K. Dally. 2004. *Characteristics, degree completion times and thesis quality of Australian PHD candidates*. Callaghan: University of Newcastle.

Bourner, T., R. Bowden, and S. Laing. 2001. Professional doctorates in England. *Studies in Higher Education* 26 (1): 65–83.

Carr, S., M. Lhussier, and C. Chandler. 2010. The supervision of professional doctorates: Experiences of the process and ways forward. *Nurse Education Today* 30: 279–284.

Dabbagh, N., Benson, A.D., Denham, A., Joseph, R., Al-Freih, M., Zgheib, G., Fake, H. and Zhetao, G. 2016. *Learning Technologies and Globalization: Pedagogical Frameworks and Applications*. Springer: New York

Ellis, A., and A. Anderson. 2009. A snapshot of Australian professional doctorates. In *Professional doctorate research in Australia: Commentary and case studies from business, education and indigenous studies*, ed. P. Miller and T. Marchant, 7–14. Lismore: SCU Press.

Erwee, R. 2004. Professional doctorates and DBAs in Australia: Dilemmas and opportunities to innovate. *International Journal of Organisational Behaviour* 7: 394–400.

Evans, T., P. Macauley, M. Pearson, and K. Tregenza. 2005. Why do a 'prof doc' when you can do a PhD? In *Professional Doctorates 5: Revised papers from the fifth Professional Doctorates Conference: Working doctorates: The impact of professional doctorates in the workplace and professions*, ed. T.W. Maxwell, C. Hickey, and T. Evans, 24–34. Geelong: Research Institute for Professional and Vocational Education and Training.

Fenge, L. 2009. Professional doctorates – a better route for researching professionals? *Social Work Education* 28 (2): 165–176.

Fergie, G., S. Beeke, C. McKenna, and P. Crème. 2011. 'It's a lonely walk': Supporting postgraduate researchers through writing. *International Journal of Teaching and Learning in Higher Education* 23 (2): 236–245.

Galvin, P. 2004. Success with off-shore DBAs: Experiences from Hong Kong and Thailand. *International Journal of Organisational Behaviour* 7 (7): 431–439.

Golde, C.M., and T.M. Dore. 2001. *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education*. Madison: Wisconsin Center for Education Research.

Group of Eight. 2013. *The changing PhD: Discussion paper.* The Group of Eight: Turner, ACT.

Hay, G.W. 2004. Executive PhDs as a solution to the perceived relevance gap between theory and practice: A framework of theory-practice linkages for the study of the executive doctoral scholar-practitioner. *International Journal of Organisational Behaviour* 7 (1): 375–393.

Kiley, M. 2009. 'You don't want a smart Alec': Selecting examiners to assess doctoral dissertations. *Studies in Higher Education* 34 (8): 889–903.

Kiley, M. 2011. Developments in research supervisor training: Causes and responses. *Studies in Higher Education* 36 (5): 585–599.

Kiley, M., and K. Bell. 2014. *Report of state-based workshops: Coursework in Australian doctoral education: What's happening, why and future directions?* Sydney: Office of Learning and Teaching.

Kortt, M., S.J. Pervan, and O. Hogan. 2016. The rise and fall of the Australian DBA. *Education + Training* 58 (4): 390–408.

Lee, A. 2008. How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education* 33: 267–281.

Lovitts, B. E. 2001. *Leaving the Ivory Tower: The Causes and Consequences of Departure from Doctoral Study*. Rowman & Littlefield: Lanham, Maryland, United States.

Lovitts, B. 2006. Being a good course-taker is not enough: A theoretical perspective on the transition to independent research. *Studies in Higher Education* 30: 137–154.

Mahmud, S., M. Wallace, G. Sanderson, P. Hukam Singh, C. Briguglio, T. Thuraisingam, and S. Yeo. 2010. In *Collaborative approaches to moderation of assessment in transnational education*, *AIEC Conference*, October 2010.

Manathunga, C. 2009. Supervision as a contested space: A response. *Teaching in Higher Education* 14 (3): 341–345.

Manathunga, C., C. Smith, and D. Bath. 2004. Developing and evaluating authentic integration between research and coursework in professional doctorate programs. *Teaching in Higher Education* 9: 235–246.

Manathunga, C. 2005. The development of research supervision: 'turning the light on a private space'. *International Journal for Academic Development* 10(1): 17–30.

Manathunga, C., R. Pitt, L. Cox, P. Boreham, G. Mellick, and P. Lant. 2012. Evaluating industry-based doctoral research programs: Perspectives and outcomes of Australian Cooperative Research Centre graduates. *Studies in Higher* 37 (7): 843–858.

Marchant, T. 2012. The implications of globalisation for the management and business research environment. In *Transnational doctoral education and research: An Asian focus*, ed. P. Miller, A. Selvanathan, and G. Meredith, 209–226. Lismore: SCU Press.

Marchant, T., and M. Wallace. 2013. Sixteen years of change for Australian female academics: Progress or segmentation? *Australian Universities Review* 55 (2): 60–71.

Marchant, T., N. Anastasi, and P. Miller. 2011. Reflections on academic writing and publication for doctoral students and supervisors: Reconciling authorial voice and performativity. *International Journal of Organisational Behaviour* 16 (1): 13–29.

Marginson, S. 2015. International education in Australia: Riding the roller coaster. *International Higher Education* 68: 11–13.

McCarthy, G. 2012. The case for coaching as an approach to addressing challenges in doctoral supervision. *International Journal of Organisational Behaviour* 17: 15–27.

Meredith, G. 1998. Global DBA delivery via the internet. In *Proceedings of Professional doctorates: Innovations in teaching and research – proceedings of the professional doctorate conference*, eds. T. Maxwell & P. Shanahan. Coffs Harbour.

Meredith, G. 2012. Publishing research outcomes. In *Transnational doctoral education and research: An Asian focus*, ed. P. Miller, A. Selvanathan, and G. Meredith, 291–302. Lismore: SCU Press.

Miller, P. 2009. Professional development for research supervisors. In *Professional Doctorate Research in Australia: Commentary and case studies from business, education and indigenous studies*, ed. P. Miller and T. Marchant, 43–54. Lismore: SCU Press.

Morley, C. 2005. Supervising professional doctorate research is different. In *Supervising postgraduate research: Contexts and processes, theories and practices*, ed. P. Green, 106–123. Melbourne: RMIT University Press.

National Board of Employment, Education and Training (NBEET). 1989. *Review of Australian graduate studies and higher degree*. Canberra: Department of Education, employment and Workplace Relations.

Neumann, R. 2005. Doctoral differences: Professional Doctorates and PhDs compared. *Journal of Higher Education Policy and Management* 27 (2): 173–188.

Neumann, R., and M. Goldstein. 2002. Issues in the ongoing development of professional doctorates: The DBA example. *Journal of Institutional Research* 11: 23–37.

Paul, A.M., and V. Long. 2016. Human-capital strategies to build world-class research universities in Asia. The transnational politics of higher education: Contesting the global/transforming the local. In *The transnational politics of higher education: Contesting the global/transforming the local*, ed. Chou Meng-Hsuan, I. Kamola, and T. Pietsch, 130–155. New York: Routledge.

Pearson, M., Evans, T. and Macauley, P. 2008. Growth and diversity in doctoral education: assessing the Australian experience. *Higher Education* 55 (3): 357–372.

Pervan, S., D. Blackman, T. Sloan, M. Wallace, A. Vocino, and C. Byrne. 2016. Framing the socialisation process of the DBA candidate: What can universities offer and what should candidates bring? *Studies in Continuing Education* 38 (1): 1–19. https://doi.org/10.1080/0158037X.2015.1120191.

Rynes, S.L., T.L. Giluk, and K.G. Brown. 2007. The very separate worlds of academic and practitioner periodicals in human resource management: Implications for evidence-based management. *Academy of Management Journal* 50 (5): 987–1008.

Sakurai, Y., K. Pyhalto, and S. Lindblom-Ylanne. 2012. Factors affecting international doctoral students' academic engagement, satisfaction with their studies, and dropping out. *International Journal for Researcher Development* 3 (2): 99–17.

Sarros, J.C., R.J. Willis, and T. Hardie. 2004. The DBA in Australia and the Asia Pacific: Opportunities and challenges. *International Journal of Organisational Behaviour* 7 (8): 440–455.

Sarros, J.C., R.J. Willis, R. Fisher, and A. Storen. 2007. DBA examination procedures and protocols. *Journal of Higher Education Policy and Management* 27: 151–172.

Scott, D., A. Brown, I. Lunt, and L. Thorne. 2004. *Professional doctorates: Integrating professional and academic knowledge*, Society for Research into Higher Education. Maidenhead: Open University Press.

Shrivastava, P. 1987. Rigor and practical usefulness of research in strategic management. *Strategic Management Journal* 8 (1): 77–92.

Smith, K.M., E. Crookes, and P.A. Crookes. 2013. Measuring research 'impact' for academic promotion: Issues from the literature. *Journal of Higher Education Policy and Management* 35 (4): 410–420.

Wallace, M., S. Pervan, T. Sloan, A. Vocino, D. Blackman. 2014. Developing higher level skills and competencies for business in Australia: First understand the DBA and its candidate. *EURAM conference.* Valencia, June 3–5.

Wallace, M., S. Pervan, C. Byrne, A. Vocino, D. Blackman, and T. Sloan. 2015a. A decade of change in Australia's DBA landscape. *Education + Training* 57 (1): 31–47. https://doi.org/10.1108/ET-07-2013-0096.

Wallace, M., N. Sheldon, S. Pervan, T. Sloan, A. Vocino, and D. Blackman. 2015b. Mind the gap: Navigating the transition from coursework to thesis for candidates and supervisors in a professional doctorate program. *EURAM Conference*, Warsaw, 17–19 June.

Wallace, M., N. Sheldon, S. Pervan, T. Sloan, A. Vocino, and D. Blackman. 2015c. The role of the DBA in Australia in enhancing career capital, professional and lifelong learning. *ANZAM Conference*, December.

Wellington, J., and P. Sikes. 2006. A doctorate in a tight compartment: Why do students choose a professional doctorate and what impact does it have on their personal and professional lives? *Studies in Higher Education* 31 (6): 723–734.

Yaghi, B. 2008. Research pentathlon: Front-end design Framework. Paper presented at the *British Academy of Management Conference*, Harrogate, September.

Zeegers, M., and D. Barron. 2012. Pedagogical concerns in doctoral supervision: A challenge for pedagogy. *Quality Assurance in Education* 20: 20–30.

How to Manage a Doctor of Business Administration: Now the Hard Selling Is Over

24

Simon J. Pervan and Michael A. Kortt

Contents

Abstract

This chapter examines the recent past, the present, and the future of the Doctor of Business Administration (DBA), a degree that in Australia has experienced fluctuating fortunes and popularity. Due to its nature and its target cohort, the degree may be susceptible to the impact of external factors, including economic downturn, but that makes it timely to consider the future of the degree. The chapter commences with a detailed analysis of the trends in its enrolments and the

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numerical decline across the sector in the students enrolling. Then follows study of the providers, including the initial expansion in the number of universities offering the degree, but this analysis also revealing a "rise and fall" of the degree from the 1990s into the twenty-first century. For the future, the chapter asks and provides possible answers for questions a university should ask about offering the DBA, related to the degree, including being aware of a strong rationale, knowing the market and cost, finding industry partners among others, followed by recommendations for a university and the candidates to manage the degree.

Keywords
Professional doctorates · DBA · Doctorate of business administration · Post graduate education

Introduction

Since its inception in 1993, the Australian DBA has had a turbulent history. By 1999, over 500 candidates were enrolled with rapid growth to ensue. By 2005 over 1,500 enrolments were recorded (Kortt et al. 2016). However, by 2006 the program was showing signs of decline and by 2013 the number of enrolments had fallen dramatically from 1,461 to 869. So, why did this occur after such a promising start? The global financial crisis appears an obvious explanation. With most programs incurring fees of over $50,000, candidates from such discretionary expenditure. However, this is not the typical experience of universities during an economic decline with students often attracted to study to upskill in these times. What's more, by 2013 the DBA was still declining with a number of universities having pulled out of programs or imposing moratoriums on enrolments. Some which remain in place today.

Other historical evidence suggests more systemic reasons for the decline. For instance, there remained a general malaise in the academic community about the worth of the DBA next to the PhD (Wallace et al. 2015). In addition, many context-based PhDs were emerging that were equally attractive to the business person typically drawn to the DBA. There was suggestion also that growth occurred too quickly for the DBA in the Australian education sector with many universities eager to capitalize on full fee paying candidates in addition to the Research Training Scheme funding that higher degree completions attracted. In addition to the substantial domestic cohort, large international programs had emerged and both had gained the attention of the Australian University Quality Agency (AUQA). Governance issues were a primary concern identified in reports released between 2004 and 2009. These were mainly centered on the quality of supervision candidates were receiving but also around the treatment of examination reports and the academic standard of the programs. Between 2004 and 2013 numbers of overseas candidates fell by 53% with commencements falling by 81% (Kortt et al. 2016).

So where to now for the DBA? It appears to be at a cross road. Questions remain over its relevance in the face of more "practical" PhDs and the introduction of

coursework in many Australian PhD programs; coursework in the DBA was up until now a unique and attractive feature to the DBA market (Sarros et al. 2004). Yet much remains attractive about the DBA for the senior business people it attracts. For instance, the cohort-based and often part-time entry requirements better facilitate the socialization needs of candidates who are typically twice removed from the academic world (Bourner et al. 2010). In addition, the flexibility given by the Australian Qualifications Framework, AQF10 definition of the DBA seems better suited to the projects business people want to undertake, with the distinguishing feature (from the PhD) requiring DBA graduates to make ". . .a significant and original contribution to knowledge in the context of professional practice" (Australian Qualifications Framework Council 2013, p. 63).

It appears that the DBA does not need the hard sell that has characterized its development up until now. Despite perceived problems, potential demand remains high for the degree (Wallace et al. 2015). There is an opportunity now to learn from the past to establish quality programs characterized by good governance, including strong integrity protocols, and fundamentally driven by the effective socialization of new cohorts toward independent scholarship in a professional context.

This chapter will outline these measures drawing on past literature and the collective experience of the authors both of whom have been involved in running DBA programs over the past 7 years. We begin by outlining in more detail the short history of the DBA in Australia before providing a checklist of criteria for the development of programs and concluding with a normative assessment of how an effective DBA might be run.

The Rise and Fall of the DBA

In a recent study, Kortt et al. (2016) provided – for the first time – the most comprehensive account of the rise and fall of the Australian DBA over the period 1993–2013. Data sourced from the Australian Government's Department of Education and Training *Higher Education Statistics Collection* was used to identify and discuss the main drivers behind the rapid rise and dramatic fall of the Australian DBA. Against this background, this section: (i) examines major trends in the number of DBA enrolments; (ii) examines major trends in the number of DBA providers; and (iii) offers possible reasons for this rise and fall.

Trends in DBA Enrolments

The trend in DBA enrolments is shown in Fig. 1a, which charts the number of domestic, overseas, and total enrolments between 1999 and 2013. Looking across Fig. 1a, the following points are worth noting (Kortt et al. 2016):

(i) The DBA was initially offered at Victoria University in 1993 (Wallace et al. 2015) with an commencing cohort of fewer than 10 candidates;

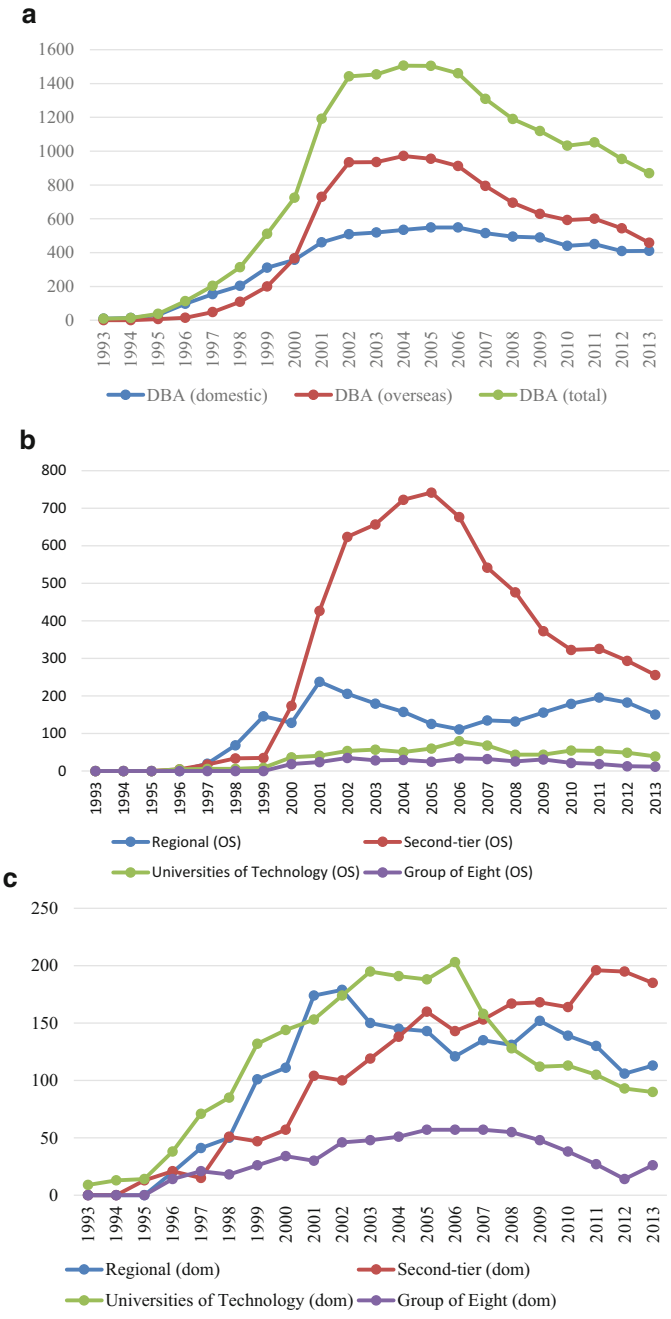

Fig. 1 (**a**) DBA candidate numbers, 1993–2013. (**b**) Number of overseas DBA candidate numbers by type of university, 1993–2013. (**c**) Number of domestic DBA candidate numbers by type of university, 1993–2013 (Source: Kortt et al. 2016, Notes: *Regional universities* (Charles Darwin;

(ii) The program grew steadily with over 500 candidates enrolled in the program by 1999.
(iii) Between 2000 and 2005, the program experienced rapid growth and, by 2005, over 1,500 candidates were enrolled.
(iv) Between 2006 and 2013, the program experienced a dramatic decline with the number of enrolments dropping from 1,461 to 869.

Over this period, the upturn and downturn in DBA enrolments was predominately driven by overseas candidates (Fig. 1a). For instance, in 2000, there were 367 overseas candidates (which comprised 51% of all enrolments) and, by 2004, overseas enrolments peaked at 972 overseas candidates (which comprised 65% of all enrolments). However, between 2005 and 2013, the number of overseas enrolments fell dramatically from 955 to 458 candidates (Kortt et al. 2016). On the other hand, domestic enrolments increased more gradually with a peak of 549 enrolments in 2005. This was followed by a steady decline in domestic enrolments to 411 by 2013.

While Fig. 1a documents the overall rise and fall of DBA enrolments, further insights can be ascertained by separately examining domestic and overseas enrolments by university type (Kortt et al. 2016) using the following classification system developed by Sarros and colleagues (2004): (i) *Regional universities* (Charles Darwin; Federation; Southern Cross; Western Sydney; Southern Queensland; Sunshine Coast); (ii) *Second-tier universities* (Deakin; Edith Cowan; Macquarie; Murdoch; Canberra; Newcastle; South Australia; Wollongong); (iii) *Universities of technology* (Curtin; RMIT; Swinburne; Victoria); and (iv) *Group of Eight universities* (Monash; Western Australia).

Figure 1b charts the trends in overseas enrolments by university type. Looking across Fig. 1b, it is apparent that second tier universities (notably the University of Newcastle and the University of South Australia) were responsible for the rapid rise and fall in the number of overseas enrolments. This unprecedented growth in enrolments would have placed significant strain on the capacity of second tier universities to effectively administer and maintain the quality of the DBA program (Kortt et al. 2016). The ensuing decline in overseas enrolments were principally driven by the University of South Australia's withdrawal from program (although it needs to be borne in mind that the University of Newcastle put in place a moratorium on enrolments in 2013). With respect to regional universities, the upturn and downturn in overseas enrolments was primarily driven by Southern Cross University

Fig. 1 (continued) Federation; Southern Cross; University of Western Sydney; University of Southern Queensland; University of the Sunshine Coast); *Second-tier universities* (Deakin; Edith Cowan; Macquarie; Murdoch; Canberra; Newcastle; South Australia; Wollongong); *Universities of technology*; (Curtin; RMIT; Swinburne; Victoria); *Group of Eight universities* (Monash; University of Western Australia))

and the University of Southern Queensland. Initially, it appeared that both these regional institutions pursued aggressive growth strategies while the downturn in enrolments is principally due to the University of Southern Queensland substantially reducing the size of its program. On the contrary, Southern Cross University continued to grow its overseas program, which peaked in 2010 but has since declined (due, in part, to a moratorium on enrolments between 2012 and 2016) (Southern Cross University has recently lifted its DBA moratorium. It is anticipated that a new cohort of DBA candidates with be admitted to the program in the latter half of 2016.). Finally, it is worth highlighting that universities of technology and "group of eight" universities only enrolled a comparatively small number of overseas students.

The trend in domestic DBA enrolments by university type is charted in Fig. 1c. Looking across Fig. 1c, the following points are worth noting. In the first place, second-tier universities gradually increased their domestic enrolments. The sharp upswing in enrolments was initially driven by Macquarie University (who no longer runs a DBA program) and, more recently, the University of Newcastle (which, as noted above, has a moratorium on enrolments). Thus, given the absence of these providers in marketplace, it expected that the number of DBA enrolments among second-tier universities will sharply decline in the coming years (Kortt et al. 2016). Turning to regional universities and universities of technology similar patterns emerge: an initial upswing followed by downswing. The fall in the number of DBA enrolments among universities of technology were mainly driven by Curtin, RMIT, and Swinburne withdrawing from the marketplace, while the drop among regional universities can be attributable, in part, to dwindling student numbers. Finally, it is worth noting that the "group of eight" domestic DBA market has remained reasonably steady over this period but has fallen in recent years with the withdrawal of Monash University from the marketplace.

Trends in DBA Providers

Table 1 reports the trends in major DBA providers between 1998 and 2013. Major providers were defined as having domestic or overseas enrolment numbers greater than or equal to 30, which is approximately twice the average DBA class size of 13 students (Graf 2014). Panel A in Table 1 lists the number of major providers with domestic enrolments greater than or equal to 30 for the years: 1998, 2001, 2005, and 2013. In 1998, the three major providers were Macquarie University, RMIT University, and Victoria. Together, these three institutions accounted 47% of all domestic DBA enrolments. However, by 2001, six additional universities were offering a domestic DBA program. Together, these nine providers captured 86% of all domestic DBA enrolments. By 2005, the domestic DBA market was still dominated by nine major providers. However, by 2013, there were only three major providers left in the market: Southern Cross University, the University of Newcastle, and Victoria University. Together, these three institutions now comprised 54% of all domestic DBA enrolments.

Table 1 The change in the number of major Australian DBA providers between 1998 and 2013

Institution	1998	Institution	2001	Institution	2005	Institution	2013
Panel A: DBA providers with domestic candidate numbers (≥ 30)							
Macquarie University	30	Charles Sturt University	31	Charles Sturt University	30	Southern Cross University	56
RMIT University	36	Curtin University of Technology	44	Curtin University of Technology	51	University of Newcastle	100
Victoria University	30	Macquarie University	61	Macquarie University	64	Victoria University	67
		RMIT University	38	Monash University	33		
		Southern Cross University	80	RMIT University	57		
		Swinburne University of Technology	36	Southern Cross University	80		
		University of Western Australia	30	Swinburne University of Technology	34		
		University of Southern Queensland	42	University of Newcastle	38		
		Victoria University	35	Victoria University	46		
Change (Δ)		• ***Plus***: *Charles Sturt, Curtin, Southern Cross University, Swinburne, Southern Queensland and Western Australia*		• ***Less***: *Western Australia and Southern Queensland* • ***Plus***: *Monash and Newcastle*		• ***Less***: *Charles Sturt, Curtin, Macquarie, Monash, RMIT, Swinburne*	
% of domestic candidates	**47%**		**86%**		**79%**		**54%**
Panel B: DBA providers with overseas candidate numbers (≥ 30)							
University of Southern Queensland	37	Charles Sturt University	49	Curtin University of Technology	34	Southern Cross University	79
		Curtin University of Technology	31	Macquarie University	48	University of Newcastle	168

(*continued*)

Table 1 (continued)

Institution	1998	Institution	2001	Institution	2005	Institution	2013
		Macquarie University	42	Southern Cross University	69	University of Canberra	40
		Southern Cross University	99	University of Newcastle	381		
		University of South Australia	378	University of South Australia	303		
		University of Southern Queensland	81				
Change (Δ)		• ***Plus***: *Charles Sturt, Curtin, Macquarie, Southern Cross, and South Australia*		• ***Less***: *Charles Sturt and Southern Queensland* • ***Plus***: *Newcastle*		• ***Less***: *Curtin, Macquarie and South Australia* • ***Plus***: *Canberra*	
% of overseas candidates	**33%**		**93%**		**87%**		**62%**

Source: Kortt et al. (2016)

Panel B in Table 1 lists the number of major providers with overseas DBA enrolment greater than or equal to 30 for the years: 1998, 2001, 2005, and 2013. In 1998, the University of Southern Queensland was the only major provider offering DBA programs to overseas students. However, by 2001, six additional universities were offering DBA programs to overseas candidates. Together, these seven providers accounted for 93% of all overseas enrolments. Of these major providers, the University of South Australia had the largest number of overseas enrolments (378), which, at the time, accounted for an astonishing 52% of all overseas DBA enrolments. In 2005, the market was comprised of five major overseas providers who accounted 87% of enrolments. While the University of South Australia was still a major provider (with 303 overseas enrolments), the meteoric rise of the University of Newcastle with a total of 382 overseas enrolments was truly remarkable. However, by 2013, only three major overseas DBA providers remained in the market: Southern Cross University, the University of Newcastle, and the University of Canberra.

The current state of DBA providers is summarized in Table 2, which provides details on:

- The overall market share (%) for each university
- Those institutions that no longer offer a DBA
- Those institutions that have put in place a moratorium on enrolments

- Those institutions that have secured accreditation from the Association to Advance Collegiate Schools of Business (AACSB), which is an internationally recognized endorsement of school academic quality

With respect to Table 2, the following points are worth noting. To begin with, the DBA program was, at one time, offered by 24 Australian universities (There are currently 43 universities in Australia (40 Australian universities, two international universities, and one private speciality university.)). However, by 2016, seven universities no longer offered the program while a further three universities had put in place moratoriums. By 2016, only 14 of Australian universities were offering a DBA program. While the number of DBA providers had fallen across the sector, the following universities retained a relatively large market share: the University of Newcastle (30.8%), Southern Cross University (15.5%), and Victoria University (11%). However, it is important to note that, in 2013, the University of Newcastle had put in place a moratorium and that Southern Cross University – which re-launched its DBA in 2016 – had put in place a moratorium between 2012 and 2016. It is not known whether the University of Newcastle will re-launch its DBA.

Finally, of the 14 universities offering DBA programs only two universities – the University of Western Australian and Curtin University – have secured accreditation from the Association to Advance Collegiate Schools of Business (AACSB), which is an internationally recognized endorsement of academic excellence. It is interesting to note that both universities are located in Perth, Western Australia and that Curtin University has strategically "positioned" its DBA under the auspices of a "research training scheme" so that Australian and New Zealand citizens and permanent residents are exempt from tuition fees. This, in and of itself, is an interesting move, since it is effectively marketing the Curtin DBA like a PhD which – in the absence of tuition fees – is likely to be attractive to domestic business students who are interested in pursuing a doctoral qualification. The other universities which currently offer the DBA as a full fee pay degree may wish to consider this approach in an effort to encourage more domestic enrolments.

Possible Explanations

During the 1990s, the DBA steadily grew in popularity. Table 1 highlights that in 1998 just four universities had domestic and overseas programs with 30 or more candidates. These numbers, however, mask the true popularity of the program, which, at the time, had 12 universities offering DBA programs to 204 domestic candidates and nine universities offering the program to 109 overseas candidates. The introduction and rise of DBA is in keeping with the recommendation from the Higher Education Council (NBEET 1989, 1990; Neumann and Goldstein 2002; Sarros et al. 2005) to "fast track higher degrees for business academics and better prepare local graduates for the knowledge economy" (Kortt et al. 2016, p. 400).

By 2001, many larger scale DBA programs had appeared. This was a period signified by rapid growth in which the DBA appeared to achieve a degree of "stature

Table 2 The current state of DBA providers

University	Market share (%), 2013	Leavers (L)/Moratorium (M), 2016	AACSB accredited, 2016
Group of eight			
Monash University	0.3	L	Yes
University of Western Australia	4.0		Yes
Universities of technology			
Curtin University of Technology	2.3		Yes
RMIT University	0.8	L	No
Queensland University of Technology	0.7		Yes
Swinburne University of Technology	0.0	L	No
Victoria University	11.0		No
Second-tier universities			
Deakin University	2.0	M	Yes
Edith Cowan University	0.0	L	No
Macquarie University	2.5	L	Yes
Murdoch University	0.7	L	No
University of Canberra	5.3		No
University of Newcastle	30.8	M	No
University of South Australia	0.5	L	No
University of Tasmania	1.6		No
University of Wollongong	6.0		No
Regional universities			
Charles Darwin University	1.7	M	No
Charles Sturt University	4.9		No
Federation University Australia	3.5		No
Southern Cross University	15.5		No
University of Western Sydney	2.4		No
University of Southern Queensland	2.3		No
University of the Sunshine Coast	0.0		No
Private universities			
University of Notre Dame Australia	1.0		No

Note: Between 1990 and 2005 Victoria University was originally named the Victoria University of Technology
Source: Adapted from Kortt et al. (2016)

and legitimacy" (Maxwell et al. 2004). Indeed some universities – notably the University of South Australia and Southern Cross University – experienced phenomenal growth. This increase can, in part, be attributed to market forces. Since the majority of DBA programs were full fee paying, they offered universities the opportunity to secure an additional stream of income (Maxwell et al. 2004). However, the size of the DBA programs run by University of South Australia (378) and Southern Cross University (179) "foreshadowed significant governance issues in relation to the quality of supervision," which were subsequently raised in a spate of reports by Australian University Quality Agency (Kortt et al. 2016, p. 400).

By 2005, the DBA had peaked to over 1,500 enrolments, the majority of which were overseas candidates (955). The DBA, however, continued to attract considerable criticism with concern expressed "over the quality of these enormous offerings with assertions that the DBA was a simplified doctorate designed to fast track completion" (Kortt et al. 2016, p. 401). Moreover, according to McWilliam and colleagues (2002), the DBA was not achieving the desired links with industry, with universities largely focused on program administration. Mounting concern was also raised over the program governance and the quality of supervision, particularly among those universities offering large offshore programs. These escalating concerns led the Australian University Quality Agency (AUQA) to investigate a number of DBA programs. A common finding in the AUQA reports were that DBA programs suffered from poor governance arrangements and questionable supervisory practices (Kortt et al. 2016).

With the DBA program put on notice, the higher education sector had been cautioned. Whether the AUQA reports were a catalyst cannot be established, but what is clear is that between 2004 and 2013, the number of overseas DBA candidates fell by a staggering 53% (Kortt et al. 2016). While concerns about the quality of the program may have, in part, driven the drop in enrolments, it is important to note that a range of other factors may have contributed to this sharp decline (e.g., changes in student preferences and the appreciation of the Australian dollar following the Global Financial Crisis in 2008).

From 2015 onwards, the DBA sits under the Australian Quality Framework Level 10 (AQF10), which formally recognizes the DBA as being equivalent to the PhD. This not only provides clarity to universities but has also been endorsed by the Australian Business Deans Council (ABDC). In essence, this means that all universities must ensure that the DBA program is compliant, with at least a 66% thesis component.

While the data charts a striking fall in DBA enrolments, the DBA remained a popular program with mismanagement in the growth of DBA programs by second-tier and regional universities a more compelling explanation for the decline in numbers. The closure of the program at the University of South Australia and the moratoriums at the University of Newcastle and Southern Cross University (which was recently lifted) provide the clearest explanation for the decline in enrolments. The closures and current moratorium across the sector may, in fact, reflect the "substantial time, resources, and costs involved in managing (and clearing the backlog) of such a large cohort of overseas candidates" (Kortt et al. 2016, p. 405). Currently, 14 Australian universities offer DBA programs, which suggest that the "commitment to the DBA does not mirror

that for the PhD" and that its brief history "tells of a program born out of market opportunism rather than educational integrity" (Kortt et al. 2016, p. 406).

The DBA Checklist

The current challenge for universities is to determine "whether they can or are able to offer the DBA under a quality framework that requires academic rigor equal to the PhD" (Kortt et al. 2016, p. 390). Against this background, we propose a seven-point checklist for those universities wishing to launch (or re-launch) a DBA program:

(i) Rationale
(ii) Conduct a market analysis
(iii) Conduct an internal cost-benefit analysis
(iv) Consult industry
(v) Compliance
(vi) Governance
(vii) Candidate socialization.

The first point – rationale – requires the School to answer the following questions: Why offer a DBA? How would the introduction of a DBA align with the strategic objectives of the School? This a particularly important first step, especially if the School is planning to apply for AACSB accreditation (which requires a clearly articulated mission statement to underpin the School's values and strategic objectives).

The second point requires the School to conduct a market analysis. More specifically, is there a potential demand for the degree? Are business professionals interested in undertaking a DBA? Is the potential demand largely from future domestic or overseas candidates? Who are the competitors in the marketplace? Is there a preference among business professionals to undertake an applied PhD in a specific field (e.g., organization behavior or human resources)?

The third point on the checklist necessitates that Schools conduct a rigorous internal cost-benefit analysis. During this phase, the cost of administering the DBA program (e.g., professional and academic staff time) needs to be compared against the forecasted revenue (e.g., tuition fees and government completion payments). The analysis should identify the optimal size of the program and at what point the program will break even or make a profit.

The fourth point requires Schools to engage and consult with industry. Does industry see value in a DBA? Will it enhance links between the university and industry? Is there a sufficient overlap in the interests of academic staff and industry practitioners wishing to undertake a DBA to successfully complete a dissertation? Will the research be suitable for publication in academic journals?

Points five and six on the checklist relate to compliance and governance matters. Universities committed to launching a DBA program must ensure that the degree is AQF10 compliant, with at least a 66% research component. With respect to

governance, universities need to ensure that all the necessary systems, staff, policies, and procedures are put in place to effectively manage the DBA program.

The final point relates to candidate socialization. In essence, business practitioners who are traditionally attracted to the DBA are "often many years out of their last university experience and require a coursework entre plus careful management into the thesis" (Kortt et al. 2016, p. 405). Thus, universities need to ensure that DBA candidates are introduced and socialized into a vibrant and stimulating research environment.

A Guide to Managing the DBA

So what might a DBA look like in today's education sector? We propose a five-step approach toward managing a quality program:

1. Be vigilant in candidate selection
2. Acknowledge the importance of the (manageable) cohort
3. Understand what the university can offer
4. Respect what the candidate can bring
5. Socialize the candidate toward independence in the scholarship of professional practice

The following lends precision to each.

Be Vigilant in Candidate Selection

Making the transition from professional practice to scholarship in practice requires the ability to develop a critical understanding of learning. This is achieved when candidates "show evidence of the ability to independently adopt a defensible position based on knowledge available to them within both the theoretical and practical worlds they span" (Pervan et al. 2016, p. 5). Many business people find this transition difficult, they are rewarded in their work place for quick and decisive thinking rather than exploring issues from multiple angles or testing the robustness of different theories (Lawless and McQue 2008). What's more they are encouraged to become experts in their field of operation often relying on intuition rather than a re-examination of the available information (Benner 1984). Paradoxically, the experiences and roles that make this transition difficult are also the qualities that universities should be looking for in a candidate. Experienced practitioners bring with them informal theories built through "reflection in action." Coupling this with formal discipline-based theory which "reflects on action" (Cowan 2006) provides a unique perspective toward advancing professional practice. It is therefore important that candidates possess two qualities and these form the basis of our first set of recommendations:

- **Recommendation 1**: In addition to the completion of an MBA or similar post-graduate qualification, ensure a minimum period of work experience at senior managerial level of at least 3 years.
- **Recommendation 2**: Ascertain that the candidate has an understanding of, and is motivated by, the value the university can provide to their learning – specifically, the ability to develop a critical understanding of learning.

Accepting candidates with MBAs but with little or no senior managerial work experience is unfortunately not uncommon in the sector but it is insufficient for purpose. Candidates must be able to reflect in action and to be able to advance professional practice. In addition, if a candidate enters a DBA program without an understanding of the need to develop the capacity to critique there is a stronger likelihood of problems in the journey. Fundamentally, it is a critical understanding of learning (i.e., the ability to critique) that a candidate should be seeking from the university. It is recommended that each applicant to a DBA is interviewed prior to acceptance to determine this understanding. Candidates that should not be approved are those who are seeking only to broaden ongoing or slated professional consulting projects, develop or test proprietorial resources on behalf of clients or employers, or obtain the title of doctor solely for esteem or enhanced promotional purposes. These may, of course, be welcomed additional benefits to a DBA project, but candidates should primarily be motivated by the desire to learn through critique of a professional practice setting.

Acknowledge the Importance of the (Manageable) Cohort

One of the great benefits of most DBA programs is the cohort-based entry system that many have adopted. This serves three purposes. Firstly, coming in from industry after years away from a university environment, a cohort approach helps relatively isolated DBAs engage as a group with the university, supporting each other as they socialize into university and discipline-based life (Bourner et al. 2010). Secondly, during their candidacy, the peer relationships created form social capital that may benefit the candidate professionally through business opportunities and personally through the support of one another as they experience similar stages over the DBA journey. Thirdly, with the DBA, often a part-time endeavor, a cohort entry serves to bind a group. This helps to provide a sense of social identity for one another as well as to administrators and faculty even when candidates spend considerable periods of time away from campus or out of contact.

The cohort, however, must be manageable. The data already presented shows just how quickly and to what proportion DBA programs grew in the 1990s and 2000s. A cursory examination of staff (supervisor) to candidate ratios across the Australian sector explains why many of the large programs had to hire external supervisors. This brought with it the governance problems picked up by AQUA in successive reports on the DBA (Kortt et al. 2016). Unfortunately, in today's environment, there are still programs relying heavily on external supervision.

This leads to our third recommendation:

- **Recommendation 3**: Implement a cohort-based entry requirement. Size and timing of each cohort entry should be dictated by the capacity of permanent staff to take on content-based supervision with new candidates.

Our-third recommendation in no way preludes the use of industry advisors or other external supervisors; however, content-based supervision capacity must be matched to cohort size. It is to what supervisors, and the university, can offer that we now turn.

Understand What the University Can Offer

When determining what the university can offer in terms of a DBA, it is very easy to over sell. Many promote industry contacts, practical knowhow, and the ability to provide innovative solutions to complex managerial problems. However, Australian Business Schools cannot always deliver on these promises. What is more, they should not seek to do so. What universities can deliver is a form of cultural capital that is very particular to their elite status as a higher education institution, and which points to their unique capability to develop a critical understanding of learning (Pervan et al. 2016). For example access to journals, knowledge of critique, knowledge of theory, behavioral norms of information sharing, and dissemination within disciplines. These are the things that are attractive to DBA candidates and leads to our fourth recommendation:

- **Recommendation 4**: Promote the university's strengths first and foremost as an elite educational institution.

Further to the development of a critical understanding of learning, universities should be aware of the knowledge modes they are capable delivering to the candidate. Four modes of knowledge are proposed as relevant to the DBA presented in Table 3, taken from Pervan et al. (2016) and adapted from Scott et al. (2004). Most universities have strength in the disciplinary knowledge mode but this approach sets aside the context as incidental to the theory and is directly in line with PhD research. It is the technical rationality and the dispositional and transdisciplinary modes that are most relevant to a DBA candidate's development with their focus on understanding the professional setting. Critical knowledge, which is based on critical theory, also focuses on the setting, but it is a disruptive approach that few candidates are likely to be able to implement. It is important that universities understand how their supervisors, and other available resources, can best implement the knowledge mode they promote as a deliverable to the DBA candidate. This leads to our fifth recommendation:

- **Recommendation 5**: Understand the knowledge you can impart to the DBA candidate and ensure resources are in place to deliver. Communicate these knowledge modes when seeking candidates.

Table 3 Four modes of knowledge for the Professional Doctorate (DBA)

Disciplinary	Technical rationality	Dispositional and transdisciplinary	Critical knowledge
Theoretical and methodological framework characterized by accepted or "proper" knowledge. Judgment is made on the ability to learn the rules and boundaries of the discipline. The practice setting is incidental	Applied knowledge with the candidate judged on their ability to set aside context to focus on enhancing the efficiency and effectiveness of economic and social systems per se "Knowledge produced by outsiders or practitioners behaving as outsiders, is superior to the knowledge produced by practitioners in situ."(p. 46)	Teaching students to think a certain way and apply that thinking to their practice setting. The end goal is the disposition and not what it produces in the workplace. The practice setting s both the source and setting for theoretical development Outcomes are not judged as they are considered unpredictable, situation specific and contextualized This mode is concerned with the individual's ability to reflect on their practice	Questioning the social and political "taken for granted" and imposing a value system requiring a more equal, just, and democratic environment This mode is emancipatory in nature and judgment is made in terms of the candidates' personal development through seeking to change or undermine conventional knowledge and organizational behavior

Adapted from Scott et al. (2004)

Of the knowledge modes presented, only the disciplinary approach can be fully delivered by the university. The others rely to varying degrees on knowledge of or access to the practice setting. The technical rationality approach in particular may require the input of industry advisors as part of a supervision team. It is also appropriate, however, to draw on the social and cultural capital the candidate can bring to relationship. It is to this that we now turn.

Respect What the Candidate Can Bring

Candidates bring important cultural and social capital to a DBA program. In terms of cultural capital, they have prominence, knowledge, access to resources, and an understanding of appropriate behaviors unique to their professional context. A university must acknowledge this is a resoruce the institution will benefit from; the candidate cannot be viewed as a blank canvas. They bring their own agency, a capacity to perceive personal goals towards which they are directing action (Edwards 2009), to the program that must be respected and drawn upon. This has particular relevance to the thesis stage of a DBA. Supervisors must be trained to acknowledge and allow the contributions candidates can make to frame their thesis

research often at a much earlier stage than the PhD candidate. Indeed, unlike many PhD candidatures, the successful completion of a DBA relies on the cultural capital the candidate can bring to the relations.

The DBA candidate's social capital is equally important. The business relationships they have will be very important to the research they conduct; these also represented as a form of "good" embodied in cultural capital (Pervan et al. 2016). However, they will also bring a reliance on family, mentors, friends, and public figures (Hopwood 2010) and may draw on this network to support them through the DBA journey. Typically, older than PhD candidates, they often have standing in their community, established friendship groups and family lives. A partner may provide emotional support and a mentor perspective. They can use these networks to leverage the agency they bring to the doctoral journey (McAlpine and Amundsen 2009), which leads to our sixth recommendation:

- **Recommendation 6**: Respect the cultural and social capital that candidates bring to a program as resources to be accepted or negotiated.

Not all resources a candidate uses to express their agency will be beneficial to the successful completion of a DBA, and these need to be carefully negotiated. For example, the senior manager who is unable to step out of that role in the supervision relationship. Navigating this relies on understanding and empathy from a supervisor who is capable of communicating the broader socialization objectives of the DBA program. Our final point of discussion.

Socialize the Candidate Toward Independence in the Scholarship of Professional Practice

Underpinning the DBA candidate's development of a critical understanding of learning is an adjustment necessary to adopt the values, skills, behaviors attitudes, norms, and knowledge of the university. This is known as a process of socialization, and it is fundamental to candidate achieving independence in the scholarship of professional practice. What is important in a university's facilitation of the process is that the candidate's own agency is recognized and that the norms and practices of the discipline do not overshadow this (Hopwood 2010). Candidates must be allowed to reach and interpret their own goals in addition to those set by the university. The process itself is framed by three processes developed by Gardner (2008). The stages are: (1) *admission* whereby a "feeling out" process occurs as candidates learn and observe roles and expectations; (2) *integration* whereby candidates begin to from relationships with peers and faculty, develop confidence in role expectations, and are observed to perform these through completion of task and communication; and (3) *candidacy* whereby the candidate has internalized roles exhibiting less dependence on others, had established a supervisory relationship, and is exhibiting characteristic of an independent researcher. This leads to our seventh recommendation:

- **Recommendation 7**: Recognize the stages of socialization that candidate's progress through and look to actively facilitate each of these.

Managing a program of effective socialization requires an understanding of these stages and the tactical development of resources and occasions to help candidates to move through them. For example, at the admission stage, candidates should be presented in forums that allow engagement with a wide range of faculty, administrative staff, and other peers. Cohort launches are an effective way to achieve particularly if announced at regular symposia where candidates and staff can present work to one another. At the integration stage, symposia should be maintained. The coursework typical of a DBA program is also beneficial to providing forums to learn and exhibit role expectations. It is beyond coursework that particular care must be taken. Moving from coursework to thesis is a natural point of attrition for DBA candidates. Many experience a sense of isolation as administrative support and regular classes fall away.

Thus candidates lose a comfort zone which had been familiar to them during their bachelor and masters programs. They also lose the regular contact with peers and other staff. A useful way to mitigate this problem is to maintain some form of coursework throughout the candidature. This need not be assessable and could take the form of regular master classes or a thesis development unit. At candidacy, in addition to measures already in place, it is important to encourage the candidate to begin to control their research agenda through supervisor encouragement and independent thought. It is also necessary to look beyond completion to outcomes sought from the DBA including those unsought when the candidate entered. This may be employment opportunities in industry or academia. Providing professional development mentoring, media training, and academic writing workshops and mentoring are examples of the kinds of support appropriate as the final stage to independent scholarship is achieved.

Conclusions

In this chapter we have set out a case for change in the way DBA programs have been managed. There is much to like and to dislike about the way this professional doctorate has been developed in Australia since its inception in the early 1990s. It is now time to take stock and to develop programs which truly deliver on their potential. The DBA candidate is a unique source of value to Business Schools bringing with them industry networks and the ability to reflect on theory in action that few academic staff or PhD candidates can match.

Reflecting on the DBA's history in Australia, it appears fundamentally important that program size is maintained at a manageable level. It is our contention that this has been the single biggest problem in terms of governance and quality of past and present programs. We have presented a seven-point checklist for those universities considering a launch or relaunch built around a full internal and external analysis of capacity, viability, and design. This is supported by seven-

key recommendations that we believe should be considered when managing a DBA program. Ultimately the success and future of the DBA lies in the capacity of senior program managers to develop a program of socialization that recognizes the value through cultural and social capital that universities and candidates bring to the relationship.

References

Australian Qualifications Framework Council (AQFC). 2013. *Australian qualifications framework second edition*. Adelaide: AQFC.

Benner, P. 1984. *From novice to expert: Excellence and power in clinical nursing practice*, 13–34. Menlo Park: Addison-Wesley.

Bourner, T., R. Bowden, and S. Laing. 2010. Professional doctorates in England. *Studies in Higher Education* 26 (1): 65–83.

Cowan, J. 2006. *On becoming an innovative university teacher: Reflection in action*. Buckingham: Society for Research into Higher Education & Open University Press.

Edwards, A. 2009. Agency and activity theory: From the systemic to the relational. In *Learning and expanding with activity theory*, ed. A. Sannino, H. Daniels, and K.D. Gutierrez, 197–211. Cambridge: Cambridge University Press.

Gardner, S.K. 2008. What's too much and what's too little? The process of becoming an independent researcher in doctoral education. *Journal of Higher Education* 79 (3): 326–350.

Graf, T. 2014. *Global DBA survey. Professional doctorates in management*, DBA Compass. http://www.dba-compass.com/Survey.

Hopwood, N. 2010. A sociocultural view of doctoral students' relationships and agency. *Studies in Continuing Education* 32 (2): 103–117.

Kortt, M.A., S.J. Pervan, and O. Hogan. 2016. The rise and fall of the Australian DBA. *Education and Training* 58 (4): 390–408.

Lawless, A., and L. McQue. 2008. Becoming a community of critically reflective HR practitioners: Challenges and opportunities within an MA partnership programme. *Journal of European Industrial Training* 32 (5): 323–335.

Maxwell, T.W., T. Evans and C. Hickey. 2004. Professional doctorates: Working towards impact. In *Professional doctorates: The impact of professional doctorates in the workplace and professions. Proceedings of the 5th professional doctorates conference, 2004*, 1–7. Geelong: Research Institute for Professional and Vocational Education and Training, Deakin University.

McAlpine, L., and C. Amundsen. 2009. Identity and agency: Pleasures and collegiality among the challenges of the doctoral journey. *Studies in Continuing Education* 31 (2): 109–125.

McWilliam, E., P.G. Taylor, P. Thomson, B. Green, T. Maxwell, T. Widy, and D. Simons. 2002. *Research training in doctoral programs: What can be learned from professional doctorates?* Canberra: Evaluation and Investigations Report, Higher Education Division of the Australian Government Department of Education, Science and Training.

National Board of Employment, Education and Training. 1989. *Review of Australian graduate studies and higher degrees*. Canberra: Department of Education, Employment and Workplace Relations, NBEET.

National Board of Employment, Education and Training. 1990. *Higher education courses and graduate studies*. Canberra: NBEET.

Neumann, R., and M. Goldstein. 2002. Issues in the ongoing development of professional doctorates: The DBA example. *Journal of Institutional Research* 11 (1): 23–37.

Pervan, S., D. Blackman, T. Sloan, M. Wallace, A. Vocino and C. Byrne. 2016. Framing the socialisation process of the DBA candidate: What can universities offer and what should candidates bring? *Studies in Continuing Education* 38 (3): 1–19.

Sarros, J.C., R.J. Willis, and T. Hardie. 2004. The DBA in Australia and the Asia Pacific: Opportunities and challenges. *International Journal of Organisational Behaviour* 7 (8): 440–455.

Sarros, J.C., R.J. Willis, and G. Palmer. 2005. The nature and purpose of the DBA: A case for clarity and quality control. *Education and Training* 47 (1): 40–52.

Scott, D., A. Brown, I. Lunt, and L. Thorne. 2004. *Professional doctorates: Integrating professional and academic knowledge*, Society for research into higher education. Maidenhead: Open University Press.

Wallace, M., C. Byrne, A. Vocino, T. Sloan, S.J. Pervan, and D. Blackman. 2015. A decade of change in Australia's DBA landscape. *Education and Training* 57 (1): 31–47.

Knowing Your Research Students: Devising Models of Doctoral Education for Success

25

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Contents

All submissions to the ACOLA review can be accessed via this weblink: http://www.researchtrainingreview.org.au/submissions/submissions/.

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Abstract

Australia has experienced a "massification" of graduate research education in recent decades as numbers of research students have risen dramatically. This massification has given rise to considerable diversity within the student population, both in terms of their characteristics and their goals/purpose for undertaking higher degrees by research. This chapter draws on recent insights from 31 of the 80 submissions to the ACOLA (Australian Council of Learned Academies) review of Australia's Research Training System commissioned by the federal government in 2015. An international literature review was also undertaken. Focusing on doctoral education, we examine the wide range of student characteristics and aims/purposes for the doctorate, including the aims of stakeholders such as industry, and the range of institutional responses to this diversity. We critically discuss the relative merits of these various responses and suggest ways in which they can be conceptualized in a systematic way. A best practice model of managing diverse doctoral students, achieving high quality outcomes and future policy directions are put forward. We argue in this chapter, as have others, that a "one size fits all" approach to doctoral education is neither equitable nor likely to meet all stakeholder expectations. Moreover, attrition and completion rates could be improved by showing a greater focus on diverse student needs and purposes. The purposes of doctoral education vary for different stakeholders, and as such, it is vital that we cater for these diverse needs through systemic models that are tailored to student capabilities, needs, and goals.

Keywords

Student diversity · Doctoral education · Australian research training system · Socialisation · Researcher identity

Introduction

Australia has experienced a dramatic increase in Higher Degree by Research (HDR) enrolments, with commencing student numbers rising sixfold over the period 1988–2014. (ACOLA 2015: 2). By 2014, there were close to 60,000 research (HDR) students enrolled across 41 universities (ibid.: 4). Within this student population, there was considerable diversity, with 30% of students being international, 45% in paid employment, and the average age being 37 years (Australian Council of Graduate Research 2015: 3). Also increasingly diverse was the range of graduate destinations obtained by those completing their HDR programs (ACOLA 2015: 11). The subsequent impact of such rapid and profound changes in the doctoral landscape, coupled with federal government changes to funding, regulatory functions, and the emphasis on research training and research environments, is evident in the emergence of a broad range of models for doctoral education. This chapter focuses on diversity within student cohorts, the quest for a more comprehensive definition of "doctoral success" and ensuing models for "best practice."

The chapter draws on recent data from 31 of the 80 submissions made to the ACOLA (Australian Council of Learned Academies) review of Australia's Research

Training System commissioned by the federal government in 2015. An international literature review was also undertaken in order to ground our work in the most current research evidence from Australia and overseas. Themes investigated in this literature review included student/candidate diversity, student socialization, and the development of researcher identity. This latter theme of student socialization towards a researcher identity is a key organizing concept in this review, which we argue links directly to student success and indirectly to the researcher attributes and skills sought by policymakers and employers (ACOLA 2015, xiii). (The authors randomly sampled from the 80 submissions, ensuring a balance of university types, locations and sizes, including submissions from peak bodies such as the ABDC, ATN and CRC, and student organizations such as CAPA and the National and Aboriginal and Torres Strait Islander Higher Education Consortium. We stopped reading when "saturation" had been reached, i.e., no new themes or observations were emerging.)

In this chapter, we examine the wide range of student characteristics and aims/purposes for the doctorate, including the aims of stakeholders such as industry, the range of institutional responses to this student diversity and aims/purposes. We also discuss the relative merits of these various responses and suggest ways in which they can be conceptualized in a systemic way.

We agree with the ACOLA report that a "one size fits all" approach towards doctoral education is neither feasible nor likely to meet all stakeholder expectations or purposes. Moreover, completion rates could be expedited and attrition reduced by placing greater focus on diverse student characteristics, needs, and purposes (Taylor and Antony 2000; Gonzalez 2006; Gardner 2010; McKinley et al. 2011). With high attrition rates evident among Australian doctoral students (30%, up to 50% in some disciplines) (McAlpine and Norton 2006; ACOLA 2015: 9; Centre for the Study of Research Training and Impact 2015: 2), the problem of ensuring a successful HDR experience is a challenge we share with other comparable western countries such as the UK, Canada, and the USA (ibid.)

Before moving forward here, we note that the notion of "success" is a highly contested term in that definitions range from a focus on timeliness and a "successful" examinable outcome (such as a thesis), to more rounded definitions that also encompass overall satisfaction (Anderson et al. 2013), research training opportunities, connectivity with industry/professional/scholarly networks, scholarly outcomes (Gardner 2009), and the generation of doctoral capabilities (Bowden and Marton 1998). In this chapter, we assume this more encompassing definition where timely completion is a necessary but insufficient condition for success. We argue this is especially the case given the variety of student goals and destinations.

While the ACOLA report touched on student diversity and improving access and participation for students from non-traditional backgrounds as one of its eight terms of reference, we take this issue further and argue strongly that this is a key challenge driving change in the Australian doctoral education system. Together with the trend for HDR graduates to be employed in many sectors and jobs outside academia, we view **diversity of students and diversity of purposes** as vital to formulating a framework for best practice postgraduate research education in Australia. With government funding increasingly tied to timely successful completions, the diversity

focus in postgraduate education also links directly to issues of viability and cost effectiveness of doctoral education. ("Timely" completion in the Australian context is defined as completion within 4 years equivalent full-time enrolment (EFT).)

The ACOLA review aimed broadly to enhance the research training system to drive quality outcomes and intersectoral collaboration in support of an emerging knowledge economy based on innovation and creativity. We argue that catering for student diversity and a broad range of purposes in doctoral education will assist the attainment of this overarching vision through greater equity, efficiency, and coherence in research training. (The ACOLA review (2015) terms of reference were as follows: The Review will examine Australia's HDR training system and consider the priorities for reform, including how to: (1) ensure that Australia's HDR training models are comparable with the best in the world; (2) ensure that research graduates are equipped for and achieve employment outcomes in a range of sectors, including academic teaching, research, and industry; (3) provide greater opportunity for industry relevant HDR training, including through, (a) support for industry relevant research projects and experience, (b) access to industry and business relevant skills within HDR training programs, such as entrepreneurial skills, (c) recognition of prior experience in industry or other relevant employment; (4) remove barriers in the regulatory framework to facilitate innovation in degree models and align with international best practice including: (a) facilitating opportunities for more structured HDR training programs, including through professional development, coursework and internships, (b) supporting alternative pathways to a PhD that align with international best practice, such as masters degree preparatory models; (5) support admission and attainment for PhD candidates from nontraditional backgrounds, including supporting indigenous research candidates; (6) ensure the research workforce pipeline is secure in field of national importance, including areas aligned with national science and research priorities; (7) ensure that our HDR training system delivers a high-quality research and learning environment and continues to support candidate choice and competition between providers; (8) make the best use of current resources invested in HDR training by all stakeholders, including universities, industry, and the Australian government.)

Diversity and flexibility in approach towards graduate research education arguably answers the challenges of student diversity, enhances the doctoral experience, and extends graduate capabilities. It is also an objective supported by peak bodies in Australia and overseas, such as the UK Council for Graduate Education (Taylor 2007) and the Council of Australian Postgraduate Associations (Council of Australian Postgraduate Associations 2015) as well as many universities (e.g., Deakin University 2015). This said the chapter seeks to synthesize key principles and processes to offer a unified framework for delivering this flexibility and diversity in a way that addresses national strategic objectives within a global education marketplace.

In this chapter, we focus primarily on doctoral education as the main area of activity within HDR programs. The term "student" in this context refers to doctoral students, whether enrolled or confirmed as candidates within a given doctoral program. "Graduate" refers to a student who has completed and graduated from a

doctoral program. "Doctoral program" refers to the full range of doctoral courses available at Australian Qualifications Framework (AQF) Level 10 including the traditional research-based doctorate, professional doctorates, practice-based doctorates, publication-based doctorates, doctorates that feature coursework, and those without coursework.

This chapter is divided into six sections. Following this introductory section, the second section elaborates on five dimensions of doctoral student diversity and diversity of purposes in the Australian research training system. The third section examines the consequences and implications of that diversity, with a particular focus on student socialization, satisfaction, attrition, and completion rates. The fourth section provides an overview of program and other changes introduced by Australian universities in response to the challenges of student diversity and purposes. In the fifth section, we offer a model based on our assessment of the Australian and international approaches that best meet the challenges of student diversity and purposes. The final section offers suggestions for future policy and action in this area.

The Ways That Students Differ

Our research has identified five key dimensions along which doctoral students vary and which directly impact on their preparedness and attitudes towards doctoral education, their satisfaction/engagement with doctoral education, and their propensity to complete successfully in a "timely" manner. These dimensions are demographic, academic, professional, personal, and goal-based. The goal-based dimension meshes with both individual goals and the needs/requirements of industry, higher education, and the community, where most graduates are destined to work.

The five dimensions are outlined below and will be more fully explained in this section:

Demographic – age, gender, ethnicity/race/language background, urban/regional, domestic/international, family, or caring responsibilities.

Academic – mode of entry, full-time/part-time, degree of research preparation, gaps in formal learning, academic skill sets, notions of academic identity (McAlpine and Akerlind 2010), "completion mindsets" (Green and Bowden 2012), relationship to the academy, discipline.

Professional – prior work or industry experience, life experience/maturity, preparedness for an unknown future based on capability theory (Baillie et al. 2013; Bowden and Marton 1998), "habits of mind" (Kiley 2014), industry engagement.

Personal – health status, mental and physical wellbeing, financial circumstances, scholarship/self-funded/sponsored, preferred learning style(s).

Goal-based – motivation and purpose for undertaking doctoral education. Includes needs/requirements of potential employers, including higher education, industry, government, and the community.

In practice, these dimensions interact and coalesce within the experience of an individual student, leading to what some have termed "multiple identities" and "priorities that can change over time" (Simmons et al. 2008; Barnacle and Mewburn 2010; Pearson et al. 2011).

Much has been published about the **demographic diversity** of doctoral students. This was also a feature of submissions to the ACOLA review. As many have emphasized, the stereotypical doctoral student who is white, male, young, enrolled full-time and unencumbered by family responsibilities, training for his first position in academia, is now very much a minority (McAlpine and Norton 2006; Neumann 2002; Gardner 2010; Gonzalez 2006; McKinley et al. 2011; Sallee 2011; Charles Sturt University 2015; University of Melbourne Graduate Student Association 2015; Council of Australian Postgraduate Associations 2015; Flinders University 2015).

Today, over half of all doctoral students (54%) are female (ACOLA 2015: 104); two-thirds are over the age of 30, with 27% over the age of 40, and 32% being international students (ACOLA 2015). This mature age profile is associated with a high proportion of family responsibilities such as childcare and elder care. More than half of all HDR candidates, including doctoral students, work full-time (ACOLA 2015).

Similarly, in a large national survey of doctoral students (5,395 cases) undertaken in 2005, Pearson et al. (2011) found that most were women, the median age was 31, 5% reported a disability, 1% were indigenous, and 3 in 10 were enrolled part-time. Within this was a diverse range of ethnicities and cultural backgrounds, reflecting both the diversity of international and local students.

These demographic differences are compounded by an array of academic and personal differences, as discussed below, which can fluctuate throughout enrolment such as enrolment status, time spent on study, location of study and paid work, health, marital status, parental status, and sources of financial support.

Academic diversity relates particularly to the diverse pathways by which doctoral students enter the doctoral program. In the past, the traditional pathway was via a 1-year honors program (ACOLA 2015: 17). However, in recent years, this has changed significantly, with 43% of doctoral students now entering by way of a postgraduate qualification (ibid.: 18), such as a masters degree by coursework (ibid.: 19). The research masters degree is a less common but feasible pathway, given the lower enrolments in this degree across Australia (Australasian Council of Deans of Arts, Social Sciences and Humanities 2015). In some practice-based or professional doctorates, students may enter with graduate diplomas, VET diplomas, and industry experience. Overall, entry qualifications now vary considerably (University of Technology Sydney 2015). (It is noted in the ACOLA report that in practice, the Australian honors degree program is usually only 8–9 months in duration, as it usually begins in February and must be completed in November (ACOLA 2015: 19).)

Complicating the diversity of onshore intakes is the fact that international students bring very different educational backgrounds from diverse educational systems overseas. These students are more likely to enter the doctorate having a coursework master's degree or a level of qualification deemed equivalent to the Australian honors degree (Griffith University 2015).

Once enrolled in a doctorate, there is diversity and fluidity in the type of enrolment (Neumann 2002). Pearson et al. (2011) found that 30% of students surveyed were enrolled part-time at the time of the survey, yet 20% reported they had changed their enrolment status between full-time and part-time at least once during their candidature (Pearson et al. 2011). Similarly, a number of submissions to the ACOLA review mentioned the challenges of managing a cohort that was substantially part-time (see for example, Griffith University 2015; RMIT 2015). Pearson et al.'s (2011) study also highlighted the diversity of locations of study for doctoral students. At least 30% of the doctoral students studied off-campus, with some disciplines, such as education and business, conducting their HDR research mostly off campus (ibid.) Time spent on the PhD also varied greatly, with part-timers spending about 14.1 hours/week and full-timers 33.3 hours/week. However, there were large standard deviations (17.4 and 14.2 hours respectively), leading to some blurring in the actual distinctions between full-time and part-time study (ibid.).

International students were more likely to be in full-time attendance (92%) compared with domestic (or local students). The impact of visa restrictions is clearly evident. The research by Pearson et al. study shows that doctoral students do not just spend their time studying. Survey respondents also reported being involved in academic employment – both paid and unpaid, leisure, family and domestic responsibilities, and voluntary and community activity (ibid.). For example, the majority reported spending up to 20 hours a week on domestic responsibilities (ibid.).

Professional diversity is evident from the high proportion of doctoral students who were mature age and were in full-time employment prior to commencing a doctorate. As many submissions to the ACOLA review observed, a significant proportion of doctoral students are working in industry or have recently worked in industry (Centre for the Study of Research Training and Impact 2015; Charles Sturt University 2015; University of Canberra 2015). One submission noted that a high proportion of international students are already mid- or senior level managers or academics in their countries before commencing an Australian doctorate (University of Canberra 2015: 3).

Much of the literature in this area discusses the differences between doctoral students who bring significant professional experience and expertise to their studies (see Taylor 2007; Wright et al. 2009; Rayner et al. 2015; Klenowski et al. 2011). Older students, such as those in their 50s, arguably have a lifetime of professional and personal experience to bring to bear on the doctorate (ATN 2015; Centre for the Study of Research Training and Impact 2015; CRC Association 2015; Griffith University 2015). Flinders University noted in its submission that almost 10% of doctoral students are in their 50s (Probert 2013 cited in Flinders University 2015).

With this maturity and greater professional and industry experience comes a range of generic or transferable skills, such as teamwork, leadership, resilience, organizational skills, and communication skills, which the ACOLA review was concerned to promote across the research training system. However, the "habits of mind" (Kiley 2014) which such students deploy may at times be challenged by other more academic attributes and habits embedded in the doctorate, such as theoretical and conceptual thinking, independence and research integrity, academic writing, and

long range thinking (Australian Business Deans Council 2015). Such academic habits must be learnt as part of the socialization of the PhD student as the "novice academic researcher" (Centre for the Study of Research Training and Impact 2015).

Personal differences cover the gamut of individual circumstances of a private, physical, social, or financial nature.

Domestic students do not pay tuition fees (these are covered by the federal government's research training scheme: the RTS), but with 3,500 of the 11,895 commencing doctoral students receiving APA scholarships, this leaves a majority (70%) potentially having to cover their own living costs (ACOLA 2015: 2–3). It is, therefore, unsurprising that more than half of all enrolled students are in paid employment.

International students are more likely to be funded by overseas sponsors, such as government, education, or employer bodies, through scholarships and direct grants. However, a significant minority are self-funded or privately funded by family. A very small proportion of international students (330 in a 2015 cohort of more than 20,000) receive International Postgraduate Research Scholarships (IPRS) funded by the federal government (ACOLA 2015: 3; University of Melbourne Graduate Students Association 2015). These government scholarships (Australian Postgraduate Awards: APA; IPRS) are valued at approximately $26,000 per year tax free (or approximately half the national average wage).

Doctoral students vary also with respect to mental and physical health status. Although there is little literature on this aspect, Pearson et al. (2011) noted that 5% of their national survey sample reported having a disability. In the authors' own experience as associate deans (research) and director of graduate studies, we have personally worked with doctoral students who have been wheel-chair bound, suffered from multiple sclerosis, depression, bipolar disorder, cancer and various common illnesses such as thyroid problems, vision problems, and the like. Over the lengthy period of a student's enrolment (4 or more years full-time, 8 years part-time), it is highly likely that a student will experience some kind of change in their health status whether mental and/ or physical in nature.

Coupled with these differences and changes are personal status and lifecycle transitions, such as marriage/de facto relationships, divorce, bereavement/widowhood, childbearing, and carer situations. Again, with most doctoral students being in the mature age category, they are highly likely to undergo such personal changes during the course of their doctoral experience. With the increasing numbers of female domestic students, there has also been an increasing incidence of single parents undertaking doctoral studies.

Finally, across all of these differences are the universal differences in sexual preference (GLTI), lifestyle, and cultural and personality dimensions.

Goal-based differences have also increased since the "massification" of doctoral education. Historically, young men took a doctoral program with a view to entering into tenured academic employment at a university. However, this traditional purpose now accounts for less than two-fifths of students (39%) undertaking doctoral programs (Pearson et al. 2011). Further, as mentioned above, now over 50% of doctoral students are female.

In our review, we have been able to identify eight different goals or purposes that students perceive for their doctoral education. The first of these is to enter an academic career track or for those already in university employment, to gain tenure/job security/promotion within the Australian university sector.

The seven other goals or purposes of doctoral students are briefly as follows:

- For international students, to enhance their careers as academics, professionals, or managers in their home countries (University of Canberra 2015)
- For older students reaching the end of their working life, to make a contribution to knowledge and "round off" a successful work career
- For current industry practitioners or professionals, to develop research skills to enhance their professional employment prospects and careers (Taylor 2007; Hancock and Walsh 2016)
- For creative arts students, to enhance their creative practice and access new employment opportunities (Simmons et al. 2008)
- For many students of all backgrounds, to obtain intrinsic rewards from learning and expanding skills/knowledge (Baker-Sweitzer 2009)
- For indigenous and racial minority students, to use their skills and knowledge to conserve indigenous knowledge and/or address community issues/problems (Taylor and Antony 2000; McKinley et al. 2011)
- For "first in family" students (first to attend university) to achieve mobility aspirations and improve their own and their family's social status (Holley and Gardner 2012)
- For those in transition (between jobs/changing direction) as a means to retrain and enter a new profession (Pearson 1999)

The above cover the main themes captured in submissions and the literature. However, there are likely to be as many goals and purposes as there are different personal circumstances among doctoral students.

Similarly, Pearson et al. (2011) also showed that there were varying goals and expectations among the 5,395 students surveyed, professional development being the most favored goal (44%). This was followed by education (17%), knowledge production (16%), and personal development (13%), with training at 6%. Only 39% gave university employment as their preferred destination, with the next largest group (23%) not sure, 15% favored a job in the public sector, 14% aimed for the private sector, and 5% for the not-for-profit/community sector (ibid.)

Other stakeholders with distinct goals and expectations for doctoral education include government, industry, and the community. The ACOLA review (2015) expressed the general view that doctoral education in Australia plays a vital role in promoting research and innovation, substantially contributing to knowledge within Australia and internationally, and promoting economic prosperity (ACOLA 2015: vii.). The review was concerned to investigate reforms that might strengthen the capacity of the research training system to build innovation and research capacity in industry and further promote economic growth. At the industry level, employers look for a greater role in knowledge production and dissemination to promote

enterprise and industry specific goals. They also seek doctoral graduates who are "profession-ready" and can make an immediate contribution to knowledge transfer, innovation, problem-solving, and wealth creation. This said, Australian data show that far fewer PhD graduates (40% of all doctoral graduates) are employed in industry than is the case overseas in countries such as Germany, Canada, and Sweden (where the figure is 70%) (University of Melbourne Graduate Students Association 2015). The ACOLA review aimed to increase this figure to ensure greater industry/university collaboration through mechanisms such as industry placements for doctoral students (ACOLA 2015).

Implications of Student Diversity in Doctoral Education

As noted above, the expansion of doctoral education to include a vastly greater number of students has broadened and diversified the demographic and other characteristics of this student population. In concert with the internationalization of the Australian doctoral market, we find that the academic, demographic, professional, personal, and goal-based dimensions of the doctoral population have become increasingly complex and differentiated. This section looks more closely at the five dimensions of student diversity and aims, examining the implications and challenges for delivering doctoral education, the benefits this diversity offers, and also identifying the risk factors that lead in many cases to lower satisfaction, higher attrition, and non-completion rates.

Dealing first with demographics, we will examine briefly in turn the implications of diversity presented by international students, women, minority ethnic/culture and indigenous students, regional/rural students, first in family (usually low socio-economic status), older students, and those with a disability. In a student's lived reality, these dimensions overlap and intersect, so that, for example, a student may be mature age, of low socio-economic background, and indigenous (or perhaps international, and female with a disability). The combined effect of these dimensions is not additive, but is known in socio-cultural theory as "intersectionality" (Cho et al. 2013). While the complex nature of this effect is beyond the scope of this paper, it is worth bearing this in mind when dealing with those students who are often presented as belonging to discrete categories, such as "non-traditional." (Non-traditional students is a term that covers indigenous, low socio-economic, mature age, VET pathways, rural, first in family to attend university, off campus, part-time, and flexible entry students (Devlin 2010, cited in CAPA 2015).)

Demographic Issues

International students face particular problems of culture shock and cultural and psychological adjustment to the new country in which they are studying (Campbell 2015; University of Technology Sydney 2015). If they are from countries where English is not the main spoken language, they may also face communication barriers

and identity issues (ibid.). Financial and accommodation pressures due to insufficient scholarship income can lead some international students to work long hours in unregulated or poorly regulated sectors of the economy (Marginson et al. 2010). In common with other students of culturally and linguistically diverse backgrounds, some find themselves dealing with subtle or indirect discrimination from the university system including their supervisors and peers, which is further explained below. Finally, homesickness and social isolation can take its toll if international students are not accommodated with respect to transition support and opportunities to participate in the local university community (Rujipak 2009).

Women doctoral students encounter a myriad of gender-based challenges, often subtle, covert, or indirect. Yet together these challenges can be pervasive and lead to negative outcomes such as higher attrition rates (Gardner 2010). The evidence suggests that sexism and patriarchy in the academy are still strong (Gardner 2010; Sallee 2011). Based on interviews with 40 American doctoral students (26 females, 14 males), Gardner found that 12 women had negative experiences, whereas none of the men did and that of the 12 students, who had considered or planned to leave their studies, 11 were women. The women commented repeatedly on the gender issue, such as sexist attitudes within the department, discrimination in hiring of faculty members, long working hours (e.g., 60–70 hours/week), and the relative scarcity of female academic role models. Furthermore, we suggest that such a lack of role models means limited mentorship opportunities. Similarly, Sallee (2011) found that masculine norms continue to shape the culture of disciplines and lead to differential socialization and treatment of men and women doctoral students (ibid.). Issues, such as academic competition, hierarchy, and objectification of women, were among those raised by her interviewees. Sallee conducted an ethnographic study involving observations, document analysis, and interviews with 14 doctoral students (12 women, 2 men) in a male-dominated Aerospace and Mechanical Engineering department in the USA. She found that supervisors pushed students to work long hours and encouraged public displays of competition and mutual denigration. Some female doctoral students reported receiving unwanted "romantic" undertones and attention, while others mentioned "dirty" jokes told by the men, and one commented on a professor who spoke differently to students when women were absent. Overall, the women reported feeling excluded and objectified (ibid.). Beyond these interpersonal dynamics at the university, work/family pressures also tend to be greater for female doctoral students, given their greater role in childcare/eldercare and domestic duties than men. Such pressures further compound the complexities and challenges related to gender.

Where race and culture are concerned, there is a significant body of literature demonstrating the unique challenges faced by doctoral students from minority groups, such as African-Americans, Maoris, Latino-Americans, Asian-Americans, and Australian indigenous students (Taylor and Antony 2000; Gonzalez 2006; Wasburn-Moses 2007; Hall and Burns 2009; Gopaul 2011; McKinley et al. 2011).

In an American survey of 619 doctoral students in special education, Wasburn-Moses (2007) found that Asian and African-American students reported a higher incidence of dissatisfaction with doctoral studies than Latino/Latina students. She

also noted that more than half of African-American doctoral students dropped out of their studies (ibid.). Similarly higher proportions of other minority group students dropped out – 38% of Asian students, 45% of Latino/Latina students, compared to 25% of Caucasians (Lovitts 2001, cited in Wasburn-Moses 2007). This study found significant racial differences in outcomes, processes, and satisfaction with doctoral study. African-Americans were more reliant on federal teaching grants for income and were the least satisfied with work/family juggling and overall workload (ibid.).

Taylor and Antony (2000) point to the low number of minority faculty members within universities as one issue of concern, since it limits the number of positive role models and leads to supervision by academics who may lack cultural awareness and sensitivity. They also point to evidence of negative racial stereotyping, leading to the questioning of intellectual skills of African-American students.

While these studies are not Australian based, closer to Australia some consistent findings have emerged from research with Maori students in New Zealand. Maoris represent 15% of the population in New Zealand but only 7% of doctoral students (McKinley et al. 2011). Maori students also exhibit higher attrition rates and lower completion rates than Pakeha students (ibid.). Based on interviews with 38 Maori doctoral students, the authors address a complex mix of issues. These are grouped around the themes of: working with different knowledge systems, working with research advisors, and researching as Maori (ibid.). These issues affect Maori doctoral students at every stage of the doctoral journey. The "unstated and often taken for granted" assumptions in both the Maori world and that of the Pakeha ensures that Maori students carrying out academic research are often "pulled in different directions" (ibid.). Given that many Maori students seek to address the marginalization and oppression of their communities through research that gives voice to their issues and narratives, complex and multidirectional "pulls" do occur. For example, Maori knowledge is relational and tied to Maori values – connectedness, mutuality, and subjectivity (ibid.). Academic knowledge is grounded in rationality and objectivity. These differences can give rise to complex negotiations and additional work involving recruitment and interaction with research participants, ethics approvals, and so on. Maori students can find themselves serving two or more masters – the university and also their tribe, subtribe, and extended family (ibid.).

In Australia, the CAPA submission to the ACOLA review reported modest gains in terms of indigenous participation in higher education in recent years, linked closely to financial rewards to universities by federal governments (p.13). However, universities have a long way to go in providing an "indigenous friendly" culture (ibid.) In Sonn et al. (2000) cited in CAPA (2015), 44% of those surveyed stated they had experienced cultural insensitivity and a lack of awareness of indigenous issues. Like Maoris, indigenous students in Australia experienced unique challenges in negotiating western discourses of knowledge. Further, indigenous staff reported being ridiculed or questioned about their skin tone or heard racist comments (ibid.) Financial barriers are particularly acute for indigenous students, given their generally low socio-economic status (National Aboriginal and Torres Strait Islander Higher Education Consortium 2015). Overall, the barriers faced by indigenous students in doctoral education are characterized as being "enormous" (ibid.).

In terms of age, and as above-mentioned, the ACOLA review (2015) revealed that doctoral students on average are mature age. Gardner (2010), based on data from interviews with 16 doctoral students over the age of 30, found that they frequently commented on their age and concerns related to this. Students felt they were discriminated against due to their age and that they would enjoy fewer academic opportunities as a result (ibid.).

"First in family" students face complex challenges, both social and financial. Yet paradoxically, research based on interviews with 20 "first in family" doctoral students in the USA found that such students "demonstrate individual motivation and direction that enable academic success" (Holley and Gardner 2012: 120).

Students from regional and remote areas face additional challenges when relocating to urban centers for doctoral education or negotiating the difficulties involved in long distance supervision (e.g., relationship building, feedback, motivational elements). This can also entail greater financial challenges and personal isolation than for other students.

Finally, students with disabilities must contend with the challenges of their respective disability and the ways in which any disabilities may be perceived, as well as the challenges of the doctoral journey itself.

Academic Issues

The extent of academic diversity in the backgrounds of doctoral students poses immense challenges for Australian universities. Universities can no longer assume a consistent set of academic skills, knowledge, and values held by students prior to commencing the doctorate. Consequently, a broad range of problems has arisen, such as extended completion times, high dropout rates, and "weaker disciplinary knowledge among HDR students" (Australasian Council of Deans of Arts, Social Sciences and Humanities 2015; Macquarie University 2015). The Centre for the Study of Research Training and Impact submission notes that despite the excellence of students recruited into doctoral programs, "almost two thirds experience difficulty with the level of learning required . . . at any one time about 22% are at the point of giving up" (2015: 1).

Of particular concern are gaps in research knowledge and techniques, due to the brevity of honors programs or the coursework background of many students. This is not just a skill or knowledge gap, but relates to the centrality of an academic research approach or academic identity in undertaking research. Students who have not undertaken academic research may not understand the mental shift required to conduct independent, rigorous, ethical, and internationally competitive research.

Termed the "hidden curriculum" of the PhD (Barnacle and Mewburn 2010) (or the challenge of "becoming academics") (ibid.), this shift in focus relies on "socialization" through integration into university departments, centers, and faculties, interaction at academic seminars and conferences, reading academic journals, and crucially, in "doing" research through analysis and writing (Baker-Sweitzer 2009; Barnacle and Mewburn 2010; McAlpine and Akerlind 2010). "Socialization" has

been defined as "the process by which students acquire the attitudes, beliefs, values and skills needed to participate effectively in the organized activities of their profession" (Nettles and Millett 1990 cited in Wasburn-Moses 2007).

For more than a decade, since the introduction of the RTS in September 2000, the doctoral landscape has exerted steadily increasing pressures on doctoral students to successfully complete in a timely manner (Green and Usher 2003; Green 2005; Green and Bowden 2012). These pressures, alongside the backdrop of a knowledge economy context in which knowledge is legitimated by performativity (Lyotard 1984) and in turn determines funding, call for a steady gaze, a focus on the tasks at hand and mindfulness in terms of the ways in which such tasks are carried out. Green and Bowden (2012) coined the term "completion mindsets" to describe the position needed to be taken by both students and their supervisors where timely and successful completion is paramount. They argue that such as stance is vital in order to achieve completion, despite the highs and lows of the doctoral experience. Building on the work of Langer (1989, 2009) and that of Langer and Moldoveanu (2000), the authors argue that mindfulness is essential within doctoral work as it involves being able to see multiple perspectives and looking for new or novel ways of thinking about what might be, in order to be able to create "new knowledge" or to contribute to knowledge in a significant way. Consequently, the ways in which both students and supervisors work within the possible range of doctoral programs impact significantly on the development of completion mindsets. A completion mindset, therefore, must be located within a conducive context or what Green and Bowden (2012) label a completion context. The arising implications for the ways in which doctoral programs are structured and conducted are discussed in the section "Diversity of Doctoral Programs and Support Structures."

Provision of the academic support and guidance to achieve this mental shift may prove beyond the capacity of one or two academic supervisors, as a later section shows. Hence, cohort-based approaches to doctoral education have become more popular, both in Australia and overseas (Radda 2012). Further, cluster panel-based research supervision has arisen in response to these changing perceptions with respect to anticipated outcomes (Eckersley and Maunders 2007).

There are significant disciplinary differences in the ways in which doctoral education is delivered, which bear on the question of successful socialization into the doctorate. For instance, Kuang-Hsu (2003) compared the experiences and satisfaction of doctoral students in the UK within different research training structures – team based and individualist (chemistry vs. education). Based on a survey of 2,200 students, the study found that doctoral students in the individualist structure (education) where the thesis was unique to the individual student experienced a low sense of partnership, a high sense of distance and hierarchy in departments, and consequently higher feelings of isolation and loneliness in the doctoral journey (ibid.). In contrast, the chemistry discipline adopted a teamwork approach to doctoral training that served to help students share resources, develop trust and informality, and experience friendliness and inclusiveness. Not surprisingly, this led to chemistry doctoral students feeling more valued, less isolated, and more involved as full members of the academic community (ibid.)

Professional Issues

If identity lies at the heart of doctoral study (Barnacle and Mewburn 2010; Cotterall 2015), then the professional or practitioner identity that mature age students bring to their studies offers both benefits and challenges. Often the human capital associated with this external identity is undervalued in the doctorate (Pearson et al. 2011). While perhaps not as problematic as the identity shift discussed above with respect to cultural minority members, student professionals are expected to acquire new capital based on academic research norms and values (Hall et al. 2009), some of which they may find initially quite testing or confronting. Authors in this area write in terms of "negotiating new identities" (ibid.) and the difficulties faced in the transition from professionals to practitioner researchers (Wallgren and Dahlgren 2007; Klenowski et al. 2011; Rayner et al. 2015).

Such writers also discuss the need for the university to make identity formation explicit, or "place identity on the table" (Hall et al. 2009). On the positive side of the ledger, however, doctoral students who are professionals/practitioners present a range of generic skills and knowledge such as on-the-job experience, time management, leadership, resilience, and judgment. What they need to succeed in the doctorate is to develop "a more scholarly gaze" (Klenowski et al. 2011), the ability to develop arguments and theories to contribute to generalizable knowledge (Hall and Burns 2009), and a strong social/ethical approach to knowledge creation.

As adult learners, techniques for socializing such students into the doctorate demand a greater focus on adult learning techniques such as the co-construction of knowledge within communities of practice. The doctoral program also needs to adapt to the fact that many of these working professionals will wish to use their research training in the workplace rather than in the university (Radda 2012).

Arguments for capability theory are relevant here. Bowden (2004) discusses knowledge capability, based on variation theory, in which relevant contextual issues, beyond content knowledge such as matters of integrity, must be taken into account when making technical or professional decisions towards solutions. While Bowden primarily focused on undergraduate students, his work is relevant to doctoral programs where arguably the need to develop in students a preparedness for an unknown future (Baillie et al. 2013; Bowden and Marton 1998) is even more pronounced. It follows then that the challenges for doctoral students are greater, in that the capacity to deal with the unknown is central to effective creation of knowledge and the development of best practice. Having said this, demographically and professionally diverse students, in particular, may be able to "see" more potential options and solutions by virtual of the different "lenses" their diversity provides in viewing the world. This has the potential to significantly benefit the doctoral experience and outcomes.

A pervasive issue for student professionals is that they are usually time poor, struggling to balance the multiple demands of paid work and family as well as doctoral study (Klenowski et al. 2011; Radda 2012). Academia, on the other hand, can present as having inflexible schedules, as shown by the provision of seminars and conferences during the day. Working at night on their doctoral work can be a

solution for many of these professionals, especially when they have children, but this isolates them from other doctoral students and academics (Gardner 2010). On-line communities of practice is one approach that may help to reduce this isolation (Radda 2012).

Personal Issues

Financial support (or the lack of it) seems to attract greatest attention in the literature and ACOLA submissions in terms of barriers to successful doctoral experiences and completion (ACOLA 2015; Flinders University 2015; National Aboriginal and Torres Strait Islander Higher Education Consortium 2015). Lack of access to scholarships for students of "non-traditional backgrounds," such as indigenous and culturally diverse students, can be one aspect of this financial barrier. Another is the limited duration of scholarships that are provided, such as the APA and IPRS, which terminate 6–12 months before the end of the maximum candidature period of 4 years (ACOLA 2015).

Mature age student professionals might benefit from part-scholarships so as to obtain some partial relief from the demands of their paid work, but these are not available within the current rules of the Australian research training system (Griffith University 2015).

Students with physical and mental health or disability issues may also face challenges in terms of staying in the doctoral program, as well as completing in a timely manner.

Once again, weighed against these challenges is the wisdom, experience, and diverse way of "seeing" phenomena that such personal diversity often affords those doctoral student dealing in these circumstances. Challenges become strengths when viewed from the perspective of originality of insights, creativity, and possibility that an "outsider" position can provide in the complex learning journal of a doctoral student.

Goal-Based Issues

The stakeholders in doctoral education can be broadly viewed as being: the individual doctoral student, the university, and industry/community employers of doctoral graduates.

We reviewed earlier the eight major goals or purposes that students perceive with respect to their doctoral studies. Industry/community employers have both distinct and overlapping needs from the universities. According to the ACOLA report (2015), industry needs both content/academic knowledge and transferable or generic skills – professional and communication. Twelve content/knowledge/professional skills areas required by industry are identified, and six communication skills. These **Content/ knowledge/professional skills are:** awareness of results transfer mechanisms, budgeting, ability to carry out independent, original research, compliance

with regulations/legislation/ethics, development of a relevant knowledge base, ethical conduct, independent and collaborative research, knowledge of IP protocols, original contribution to knowledge, project planning/ management and time management, and for **communication skills:** academic writing, engagement, grant writing, negotiation, oral presentation, and report writing (ACOLA 2015: 39).

Some individual university submissions also suggested the addition of a range of skills required by industry, such as innovation capacity/blue sky thinking and creativity, adaptability to change (Griffith University 2015), well-formed global perspectives (ibid.), high level of self-awareness and capacity for working in mixed teams (ibid.), ability to communicate research to both technical and non-technical audiences (Australian Business Deans Council 2015), stress management (Macquarie University 2015), resilience (ibid.), detachment and objectivity (ibid.), decision making and strategizing (ibid.), and cultural competency.

Interestingly, cautionary notes were made about resourcing and overcrowding as shown by the following submission comments: "there is only finite time and funding granted for PhD training" and "PhD programs have become crowded" (University of Technology Sydney 2015).

For the university sector, which employs about 40% of the doctoral graduates at present, the traditional goals of such programs revolve around content knowledge, research design and methods, quantitative and qualitative analytical techniques, theoretical and conceptual thinking, critical thinking, problem-solving, ability to use research to ask questions and answer problems, presentation and teaching skills, teamwork skills, professional communication and academic writing, and practice-based or consulting skills (Australian Business Deans Council 2015: 2–3).

Program Offerings That Cater to Student Diversity and the Challenge of Researcher Socialization

This section of the chapter critically examines the numerous ways in which Australian universities have augmented or expanded their doctoral education programs and ancillary services in recent years, to meet diverse student needs and achieve broader agendas, such as market demands/ opportunities and employability outcomes. With 75% of Australian universities either offering PhD coursework or seriously considering the inclusion of such (Kiley 2014), we look at different models of coursework being provided and the strengths/limitations. We also consider a range of other strategies being employed such as learning needs assessments, HDR supervisor training, industry training centers and placements/internships, on-line skills training courses, research projects in industry, and student mentoring programs.

Furthermore, we look at the rationale for providing these programs against the background of insights gained from the international education literature on training academic researchers from diverse backgrounds and evaluate how these programs connect with the five key dimensions of HDR student diversity as identified above.

Diversity of Doctoral Programs and Support Structures

The structures of, and support systems underpinning, doctoral programs have evolved significantly since the introduction of the RTS. These strategies extend across the five diversity dimensions or themes. While the diversity themes/dimensions were treated separately for ease of discussion, they are interconnected and permeate the Australian examples provided below. Accordingly, the dimensions are discussed within the following functional categories of change that have become evident in the Australian doctoral landscape.

Input Changes

Responding to the demographic and academic diversity dimensions, some universities have begun to implement **learning needs assessments** for incoming doctoral students. These are structured analytical tools designed to assess and document the capabilities and skill/knowledge gaps of individual doctoral students (Edith Cowan University cited in Kiley 2014). At the University of Sydney, this takes the form of a mandatory training-needs analysis (Kiley 2014). Issues that may be addressed in such an assessment include, but are not limited to, research techniques (qualitative/quantitative), literature reviews, research ethics, and data analysis.

The advantage of this approach is that there are no specific assumptions that a student has a particular body of knowledge or skills relevant to doctoral training. However, there is also the opportunity to recognize and build on existing strengths or capabilities that some, such as older students, experienced international students, and student professionals, may bring to the doctoral experience. The needs analysis has the potential to reduce unnecessary time spent in skill development, while focusing on skill gaps that do need addressing. The identification of skill gaps is also vital in averting problems that may arise later in the doctoral journey, and if addressed early and effectively, could reduce dissatisfaction and attrition.

Unfortunately, our review suggests that relatively few universities are implementing this important first step. Consequently, it usually falls to academic supervisors to identify learning needs issues in a less rigorous, "hit and miss" approach that may be inefficient and demoralizing for the student.

Program Changes

The introduction of **structured coursework** to the PhD is the most significant change relating to the academic diversity dimension. This is occurring in an effort to address knowledge and skill gaps presented by the academic diversity of students entering PhDs, and in particular, a lack of research preparation for the doctorate. While not universal, the number of universities that have begun this change process is now approaching the majority. However, this development lags behind

international practice, for example, in the USA and UK, where the inclusion of coursework in the doctorate has been standard for many years.

In Australia, examples include the Macquarie University model (2 year research masters by coursework), Graduate Diploma of Research Management (Flinders University), Graduate Diploma in Research Studies (Griffith University), Masters of Research Practice (Victoria University), Graduate Certificate in Research (University of Tasmania, cited in Australian Council of Deans of Arts, Social Sciences and Humanities 2015 and Innovative Research Universities 2015), the Integrated PhD (Wollongong University), and Engaged PhD (University of Newcastle 2015; University of South Australia 2015). In some cases (such as the University of Newcastle), this coursework includes both academic research modules and transferable skills training, the latter being more relevant to diversity of goals, including the needs of industry.

There are many different ways that universities have structured the coursework, with diverse types of content being included. For example, Victoria University's new coursework PhD provides better support to doctoral students in their first stages of candidature. The first year of the program involves coursework and the completion of a significant research output prior to confirmation. In contrast, Monash University offers a combination of mandatory coursework and skills development modules totaling 192 h. These are provided at the appropriate stages of candidature, with exemptions being granted where relevant (Kiley 2014).

The shortcomings of these diverse approaches are: a lack of consistency in additional credentials that students may be expected to gain (e.g., Graduate Certificate, Diploma, Masters degree) or not (for those who graduate with a PhD only); the risk that students may be required to undertake training that they do not need (CRC Association 2015); and some confusion for international students as to which PhD offers the best value. Another risk identified in a number of submissions to the ACOLA review is that PhD programs could become more "crowded" and the consequent time to complete significantly longer. This can be averted, as the ACOLA review proposed, by better preparing students through a Bologna-model style masters program similar to the Macquarie model. The use of learning needs assessments also obviates the chances of duplicated or superfluous training, especially during the long transition to a more consistent, Australian model of doctoral training provision.

As one ACOLA submission noted, if training is not personalized to the doctoral student's needs, there may be negative consequences. If someone has 10 or 15 years of experience in industry, they may resent having to undertake entry level training (CRC Association 2015). This speaks to the professional dimension of doctoral student diversity, which is increasingly evident as mature age students blend doctoral training with industry/professional practice.

Joint doctoral degrees with international partners (University of Technology Sydney 2015) is another type of program change, designed to respond to strategic needs for international research collaboration and in response to demographic diversity (international students).

Delivery Changes

As previously discussed, a number of universities have introduced **cohort or cluster-based research training**. This is an approach where individual doctoral students are clustered together with other students to undertake certain activities such as structured coursework, professional seminars, or group supervision (Centre for Study of Research Training and Impact 2015). This initiative may be accompanied by the development of on-line communities of practice or learning (University of Southern Queensland).

Some non-traditional PhD programs (such as professional doctorates and practice-based doctorates) feature cohort-based training as an integral component of the program and routinely include on-line discussions and activities. As we have seen, this collective feature of doctoral training and the concurrent development of a community of learners (whether face to face or virtual) has a strong evidentiary base in the education literature (Kuang-Hsu 2003; Wallgren and Dahlgren 2007; Klenowski et al. 2011). In general, cohort-based doctoral training is more effective and less likely to lead to isolation, alienation, and attrition.

This kind of approach caters well to the demographic, academic, and professional dimensions of diversity.

Support Structures and Practices

There is a myriad of initiatives that can be regarded as support practices or structures. By that, we mean that these do not form part of the formal PhD program but are offered as **additional support or resources to assist students to succeed.** These structures or practices are usually focused on the demographic or personal dimensions of diversity.

For indigenous students, they can include indigenous master classes, an indigenous studies website and databases (Queensland University of Technology submission 2015), ATSI (Aboriginal and Torres Strait Islander) scholarships, targeted support and pastoral care (ibid), special mentoring programs, and the like.

Strengthening the pipeline to doctoral students from non-traditional students (Australian Council of Graduate Research Submission 2015) is another form of support to demographically diverse students. This can take the form of cohort support networks, summer and winter schools, and mentoring for supervisors of nontraditional students (ibid.).

Unfortunately, these support structures and mechanisms may fail to "catch" certain isolated groups of students, such as part-timers, regional and rural students, students with a disability, and those from culturally and linguistically diverse backgrounds. By targeting certain "categories" of students, such programs often fail to address intersectionality and cumulative disadvantage within the student population.

Professional Development/Cultural Change

Supervisor training – (ACOLA 2015) Supervision training or development programs emerged in the early 2000s and became mandatory elements of doctoral training. Regulatory audits, such as those by AUQA, investigated the provision of such programs but also the prevalence and implementation of supervisory registration. Under the Tertiary Education Quality Standards Agency's (TEQSA) implementation of the AQF, supervisor training and supervisor registration are perceived as crucial elements in the provision of quality research training environments. This was a response to quality assurance needs, and arguably, to better equip supervisors with the diversity of student needs, they were encountering.

However, there is considerable diversity in the way that Australian universities provide supervisor training and how much is provided. Research has shown that many academics are not satisfied with the quality or quantity of doctoral supervisor training that is currently on offer (Blass and Bertone 2013).

If cultural change is required to address the subtler or indirect effects of racism, gender bias, and other forms of bias in the university system (as many writers argue), then it is likely that much of the training or professional development does not adequately deal with the complexity of such change. As such, the issue of demographic and personal diversity among students is not entirely addressed by current models of supervisor development.

Linkages with Industry

The goal-based dimension of diversity has received considerable attention in recent years, through a number of initiatives designed to develop transferable skills within doctoral students and render them more employable within industry.

One of the more established initiatives of this kind is the **E-grad school** set up by the Australian Technology Network (ATN) universities (QUT submission). This is a virtual, on-line graduate school aimed at researchers, including doctoral students. It imparts transferable skills on-line (employability, professional, and career skills). The LEAP series focuses on employability and offers modules in topics such as project management and policy matters. The MORE program emphasizes research skills and offers critical and creative thinking as well as practice-led research in creative arts, media, and design. Since 2003, over 8,000 HDR students have completed the E-grad school training courses. A follow-up study undertaken with 284 respondents found that 71% felt that the modules they took had helped them with their career goals, almost 70% had put their learned skills to use, and 65% felt they had improved their employability and career prospects (ibid.: 3).

This initiative meshes well with the goal-based diversity previously discussed, in particular the goal of making doctoral graduates more employable and useful to industry, acknowledging that the majority of graduates do not seek a career in academia.

Other initiatives that focus on direct linkages with industry include the ATN **doctoral training centers**, the professional placements in industry (PACE) programs (Macquarie University 2015) and **PhD internships** such as the AMSI program (University of Technology Sydney 2015). These are doctoral programs in which students are placed for a substantial part of their time within industry and are supervised by industry and academic supervisors. Usually, they are working on industry-conceived projects or research problems.

PhDs funded by CRCs (Cooperative Research Centres) are a long standing approach of this kind, dating back to 1991. Today there are more than 200 CRCs in Australia, based on industry-university collaborations, with an estimated 5% of all doctoral students being funded by CRCs (CRC Association 2015: 1). There is also a long history of industry-based PhD programs in Sweden, the UK, and the USA, with some mixed results. However, the literature is fairly consistent with respect to documentation of the benefits of such programs for both the doctoral students and their industry sponsors (see Wallgren and Dahlgren 2007; Pilar 2007).

Another type of initiative that deals holistically with the academic researcher and transferable skills increasingly required of doctoral graduates is the UK's **Vitae researcher development framework**. This has been adopted in recent times by the CRC Association in Australia and some universities such as Griffith University (ACOLA report, CRC Association submission). Some universities have introduced **portfolios of skill development** which students are required to maintain (University of Queensland 2015), or their **own Researcher Development Framework** (University of Adelaide cited in Australian Council of Deans of Arts, Social Sciences and Humanities 2015).

While the ACOLA review has strongly supported the use of a Vitae type framework in Australia, the CRC Association cautions from experience that doctoral students can find the complexity of the framework puts then off. As a result, the CRC has begun delivering "chunks" of the framework on an individual needs basis.

A Best Practice Model for Managing Diverse Doctoral Students and Achieving High Quality Outcomes

In this final section, we present an integrated framework based on best practice principles for delivering doctoral education in Australia. This framework is cognizant of the international lessons from the overseas experience we have reviewed, and the current state of play in Australia with respect to student diversity, needs, and purposes.

While we acknowledge that student diversity and purposes is only one piece of the puzzle in the formulation of best practice in postgraduate education, we argue that it is a crucial piece that has only recently begun to be recognized and addressed within prevailing models of Australian doctoral education. Student diversity is not new but has become an increasingly significant phenomenon due to the massification and commodification of this formerly elite section of higher education. Student purposes have already emerged as a major area of consideration in light of this

diversity, together with diversity of employer destinations that students may aim for. As such, student diversity cannot be seen as an aberration from the "norm." There is no longer a norm that typifies the average doctoral student in Australia, and so if doctoral education is to fully justify the nearly $1 billion per year spent on it (ACOLA 2015: 3), more needs to be done to address the diversity of students and purposes that we have demonstrated can pose major challenges to success. Not addressing this student diversity can also mean failure to capitalize on the immense benefits that such diversity is likely to yield, if well managed.

On this basis we put forward the following principles:

1. **"Knowing your research students"** is key to successful doctoral education. This means utilizing systemic and valid instruments to assess student capability at the beginning of the PhD journey and at various stages throughout. We argue for a capability needs-assessment of potential applicants and enrolled students to determine incoming capabilities, with a view to giving successful applicants the quality support systems and structures to better enable/ensure success. The assessment of capabilities needs to be ongoing as part of regular progress reviews, with appropriate actions taken to address any gaps.
2. **Defining "success" broadly** ensures that a variety of student and stakeholder objectives are met (rather than simply meeting the rules of the funding bodies). "Timely completion" is one element only of this definition. Also included should be overall satisfaction, the acquisition or enhancement of transferable skills, linkages to industry/community, the development of scholarly and/or industry networks, and the creation of scholarly or industry outcomes other than the doctoral thesis.
3. **Building the researcher identity into the program** by addressing the issue of scholarly and practitioner identities and explicitly dealing with the issue of identity transition from the beginning of the doctoral journey. Making explicit what makes an academic researcher or "researching professional" which many doctoral graduates will become (Taylor 2007), what values/ethics/principles they must observe; how this differs from a practitioner/professional, and imparting the skills and "habits of mind" required is vital.
4. **Promoting a "completion mindset"** is about addressing ambiguity, complexity, and possibilities as the hallmarks of the PhD journey. This will require processes that tap into the existing creativity, resilience, and persistence of students from diverse backgrounds, or developing these capabilities in younger or less experienced doctoral students. It suggests the need for an experiential and capability building program that focuses as much on personal development as researcher development.
5. Allied to number 4 is the need to develop **cohort or cluster-based models of research training** that create a community of learners who can support and stimulate each other in their PhD journey. The old "apprenticeship" model of learning from the professor which academic supervision currently provides is insufficient to ensure successful socialization of doctoral students and the development of a completion mindset. Relationships and interaction within

the academy and industry are important to this process, and these cannot be achieved via a dyad or triadic relationship alone.

6. Utilizing **on-line learning platforms** to reach out to isolated, marginalized, or over-burdened doctoral students such as single parents, regionally based students, part-time students, or busy professionals. The E-grad school developed by the ATN universities is a good case to learn from and disseminate nationally.
7. **Effecting cultural change in the university system** by tackling systemic bias and ignorance about diversity issues in the doctoral student population such as indigenous culture, immigrant/international cultures, gender, age, disability, and so on. Such diversity issues should be incorporated in supervisor development programs and backed by international evidence/data. Ensuring regular opportunities for relationship building at seminars, conferences, departmental, and faculty forums is also vital, to break down barriers, promote socialization to the researcher identity, and reduce isolation among doctoral students.
8. **Treating the doctoral student as the end product, rather than the thesis** – as we have seen in the UK and in Europe, the development of the doctoral student and their capabilities is now the key objective (ACOLA 2015) over and beyond the contribution to knowledge made by the doctoral dissertation. While contributing to knowledge is crucial, this end in itself is not sufficient, as the ACOLA review articulated.
9. **Providing structured learning opportunities** for students to learn about research, conduct research, connect with industry/community, and gain transferable skills. This can be through the development of a 2-year research masters degree in the context of a 3–2-3 year model as promulgated by the ACOLA review. In the meantime, the implementation of principle 1 "Knowing your research students" should help universities support their doctoral students to navigate the complex varieties of qualifications and transition processes needed to better "prepare" doctoral students for success.
10. **Build financial incentives in government funding** to support the above principles and provide the most flexible and responsive program and ancillary structures that support the diversity of purposes and goals among doctoral students. Government funding per student could be tiered to recognize "high needs" students in the doctoral student population (such as those with disabilities, indigenous, VET pathways) and time/support provided accordingly, both through additional supervision and greater support mechanisms.

The Way Forward

We have seen that universities in Australia have adopted a wide range of responses to the challenges of student diversity: demographic, academic, professional, personal and goal-based. Increasingly, universities are also being asked to respond to the diverse needs of industry and community stakeholders and better align doctoral education to the strategic economic interests of the nation.

The massification of doctoral education in Australia, reflecting an international trend, has not led to any great changes in PhD programs per se. The old "apprenticeship" model of academic supervision continues, albeit with the addition in some cases of structured coursework and other support structures.

There has been a considerable duplication of effort around the sector in terms of coursework development, transferable skills training, industry linkages, mentoring, and support structures. No systemic national efforts appear to have been made, however, to address the diversity challenge in doctoral education. The ACOLA review dealt only tangentially with this term of reference, focusing mainly on financial barriers for students from nontraditional backgrounds.

We suggest there is scope for universities to work together to develop national tools and guidelines to deal with student diversity and aims. This work can be undertaken through existing peak bodies such as the academies or the Deans and Directors of Graduate Studies. One obvious area is the development of a national capability needs assessment for doctoral education, as described in point 1 of the previous section. Such a tool would assist universities to tailor their doctoral programs to the needs and strengths of individual students, avoiding waste, frustration, and lost time.

In future, enrolment in universities could be informed by publicly available information about the "fit" between available support structures and diversity expertise and the "needs" of incoming diverse students.

The intelligence gathered from the national capabilities assessment tool could be integrated into supervisor training and diversity could become key to the socialization of academic supervisors.

Funding formulae could be devised that enable more support to be provided to supervisors who take on high needs students, such as those with major health issues (mental or physical) and other barriers. At present, supervisors who "rescue" such cases or invest considerably more time in such supervision receive no acknowledgement and are even penalized for non-timely completions. Without a broader definition of "success" in doctoral education, the economic rationalist position of current funding rules ensures that these supervisors are "punished" for achieving outstanding outcomes in the face of such diversity challenges. Doctoral success transforms the lives of students and benefits the community, regardless of whether the time frame for such success exactly matches the pre-determined time frames allowed for timely completion. There is a risk that with a broader definition of success the "crowding" of doctoral education increases; however, judicious and early use of capabilities assessments and support systems can attenuate that risk and help to limit enrolment duration.

Government policy needs to recognize that diversity of the doctoral student population is both a strength and a challenge to educators. If we are to continue the massification of doctoral education, we have to look after both the students and the supervisors. Knowing our research students better, in a systemic way, and delivering doctoral education through cohort-based learning that is well integrated into academic life and industry settings, is the key to achieving better outcomes, reducing attrition and non-completion, and increasing overall satisfaction by stakeholders.

References

Anderson, B., M. Cutright, and S. Anderson. 2013. Academic involvement in doctoral education: Predictive value of faculty mentorship and intellectual community on doctoral education outcomes. *International Journal of Doctoral Studies* 8: 195–201.

Australasian Council of Deans of Arts, Social Sciences and Humanities. 2015. Submission to ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Australian Business Deans Council. 2015. Submission to ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Australian Council of Graduate Research. 2015. Submission to the Australian Council of Learned Academies Review of Australia's Research Training System, August. http://www.researchtrainingreview.org.au/submissions/submissions/.

Australian Council of Learned Academies (ACOLA). 2015. Review of Australia's Research Training System. http://www.researchtrainingreview.org.au/submissions/submissions/.

Australian Technology Network (ATN). 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Baillie, C., J.A. Bowden, and J.H.F. Meyer. 2013. Threshold capabilities: Threshold concepts and knowledge capability linked through variation theory. *Higher Education* 65 (2): 227–246.

Baker-Sweitzer, V. 2009. Towards a theory of doctoral student professional identity development: A development networks approach. *The Journal of Higher Education* 80 (1): 1–33. Ohio State University.

Barnacle, R., and I. Mewburn. 2010. Learning networks and the journey of becoming 'doctor'. *Studies in Higher Education* 35 (4): 433–444.

Blass, E., and S. Bertone. 2013. *Developing a toolkit and framework to support new postgraduate research supervisors in emerging research areas*. http://www.researchsupervisiontoolkit.com. Canberra: Office for Learning and Teaching, Department of Education.

Bowden, J.A. 2004. Capabilities-driven curriculum design. In *Effective teaching and learning in engineering*, ed. C. Baillie and I. Moore. London: Kogan Page.

Bowden, J., and F. Marton. 1998. *The university of learning: Beyond quality and competence in higher education*. London: Kogan Page.

Campbell, T.A. 2015. A phenomenological study on international doctoral students' acculturation experiences at an American university. *Journal of International Students* 5 (3): 285–299.

Centre for the Study of Research Training and Impact. 2015. Submission to ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Charles Sturt University. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Cho, S., W.K. Crenshaw, and L. McCall. 2013. Toward a field of intersectionality studies: Theorizing power, empowering theory, signs. *Journal of Women in Culture and Society* 38 (4): 785–810.

Cooperative Research Centres Association. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Cotterall, S. 2015. The rich get richer: International doctoral candidates and scholarly identity. *Innovations in Education and Teaching International* 52 (4): 360–370.

Council of Australian Postgraduate Associations (CAPA). 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Deakin University. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Devlin, M. 2010. Non-traditional student achievement: Theory, policy and practice in Australian higher education, keynote address, first year in higher education international conference, 27–30 June, Adelaide.

Eckersley, B., and D. Maunders. 2007. Cluster supervision for project-based research degrees: Developing best practice. In *Supervising postgraduate research: Contexts, processes, theories and practices*, ed. P. Green. Melbourne: RMIT University Press.

Flinders University. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Gardner, S. 2010. Contrasting the socialisation experiences of doctoral students in high- and low-completing departments: A qualitative analysis of disciplinary contexts at one institution. *The Journal of Higher Education* 81 (1): 61–81. Ohio State University.
Gardner, S.K. 2009. Conceptualizing success in doctoral education: Perspectives of faculty in seven disciplines. *Review of Higher Education* 32 (3): 383–406.
Gonzalez, J.C. 2006. Academic socialisation experiences of Latina doctoral students: A qualitative understanding of support systems that aid and challenges that hinder the process. *Journal of Hispanic Higher Education* 5 (4): 347–365.
Gopaul, B. 2011. Distinction in doctoral education: Using Bourdieu's tools to address the socialisation of doctoral students. *Equity and Excellence in Education* 44 (1): 10–21.
Green, P. 2005. Complex contexts, relations and practices: The space for research supervision. In *Supervising postgraduate research: Contexts, processes, theories and practices*, ed. P. Green. Melbourne: RMIT University Press.
Green, P., and J. Bowden. 2012. Completion mindsets and contexts in doctoral supervision. *Quality Assurance in Education* 20 (1): 66–80.
Green, P., and R. Usher. 2003. Fast supervision: Changing supervisory practice in changing times. *Studies in Continuing Education* 25 (1): 37–50.
Griffith University. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.
Hall, L., and L.D. Burns. 2009. Identity development and mentoring in doctoral education. *Harvard Educational Review* 79 (1): 49.
Hancock, S., and E. Walsh. 2016. Beyond knowledge and skills: Rethinking the development of professional identity during the STEM doctorate. *Studies in Higher Education* 41 (1): 37–50.
Holley, K., and S. Gardner. 2012. Navigating the pipeline: How socio-cultural influences impact first-generation doctoral students. *Journal of Diversity in Higher Education* 5 (2): 112–121.
Innovative Research Universities. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.
Kiley, M. 2014. *Coursework in Australian doctoral education: What's happening, why and future directions*. Canberra: Office for Learning and Teaching and Australian National University.
Klenowski, V., L. Ehrich, C. Kapitzke, and K. Trigger. 2011. Building support for learning within a doctoral education programme. *Teaching in Higher Education* 16 (6): 681–693.
Kuang-Hsu Chiang (Iris). 2003. Learning experiences of doctoral students in UK universities. *International Journal of Sociology and Social Policy* 23 (1/2): 4–32. https://doi.org/10.1108/01443330310790444.
Langer, E.J. 1989. *Mindfulness*. Cambridge: AMerloyd Lawrence Book.
Langer, E.J. 2009. *Counterclockwise: Mindful health and the power of possibility*. New York: Ballantine Books.
Langer, E., and M. Moldoveanu. 2000. The construct of mindfulness. *Journal of Social Issues* 56 (1): 1–9.
Lovitts, B.E. 2001. *Leaving the ivory tower: The causes and consequences of departure from doctoral study*. Lanham: Rowman and Littlefield.
Lyotard, J.F. 1984. *The postmodern condition: A report on knowledge*. Manchester: Manchester University Press.
Macquarie University Submission. 2015.
Marginson, S., C. Nyland, S. Edenawati, and H. Forbes-Mewitt. 2010. *International student security*. Leiden: Cambridge University Press.
McAlpine, L., and G. Akerlind. 2010. *Becoming an academic: Universities into the 21st century*. London: Palgrave Macmillan.
McAlpine, L., and J. Norton. 2006. Reframing our approach to doctoral programs: An integrative framework for action and research. *HERDSA* 25 (1): 3–17.
McKinley, E., B. Grant, S. Middleton, K. Irwin, T. Williams, and R. Les. 2011. Working at the interface: Indigenous students' experience of undertaking doctoral studies in Aotearoa New Zealand. *Equity and Excellence in Education* 44 (1): 115–132.
National Aboriginal and Torres Strait Islander Higher Education Consortium. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Nettles, M.T., and C.M. Millett. 1990. Success in doctoral programs: Experiences of minority and white students. *American Journal of Education* 98: 494–522.

Neumann, R. 2002. Diversity, doctoral education and policy. *Higher Education Research and Development* 21 (2): 167–178.

Pearson, M. 1999. The changing environment for doctoral education in Australia: Implications for quality management, improvement and innovation. *Higher Education Research and Development* 18 (3): 269–297.

Pearson, M., J. Cumming, T. Evans, P. Macauley, and K. Ryland. 2011. How shall we know them? Capturing the diversity of difference in Australian doctoral candidates and their experiences. *Studies in Higher Education* 36 (5): 527–542.

Pilar, M. 2007. Academic capitalism and doctoral student socialisation: A case study. *The Journal of Higher Education* 78 (1): 71–96.

Radda, H. 2012. From theory to practice to experience: Building scholarly learning communities in non-traditional doctoral programs. *Insight: A Journal of Scholarly Teaching* 7: 50–53.

Rayner, S., J. Lord, E. Parr, and R. Sharkey. 2015. Why has my world become more confusing than it used to be? Professional doctoral students reflect on the development of their identity. *Management in Education* 29 (4): 159–163.

RMIT. 2015. Submission to ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Rujipak, T. 2009. The re-entry adjustment of Thai students in the transition from graduation in Australia to the return home. Unpublished PhD, Swinburne University of Technology.

Sallee, M. 2011. Performing masculinity: Considering gender in doctoral student socialisation. *The Journal of Higher Education* 82 (2): 187–216.

Simmons, B., A. Holbrook, J. St George, M. Lawry, and A. Graham. 2008. *Developing a researcher perspective during a fine art degree: Issues relating to supervision.* Paper presented at the AARE (Australian Association for Research in education) annual conference, Brisbane.

Sonn, C., B. Bishop, and R. Humphries. 2000. Encounters with the dominant culture: Voices of indigenous students in mainstream higher education. *Australian Psychologist* 35 (2): 128–135.

Taylor, A. 2007. Learning to become researching professionals: The case of the doctorate of education. *International Journal of Teaching and Learning in Higher Education* 19 (2): 154–166.

Taylor, E., and J.S. Antony. 2000. Stereotype threat reduction and wise schooling: Towards the successful socialisation of African American doctoral students in education. *Journal of Negro Education* 69 (3): 184–198.

University of Canberra. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

University of Melbourne Graduate Student Association. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

University of Queensland. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

University of South Australia. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

University of Technology Sydney. 2015. Submission to the ACOLA review. http://www.researchtrainingreview.org.au/submissions/submissions/.

Wallgren, Lillemor, and Lars O. Dahlgren. 2007. Industrial doctoral students as brokers between industry and academia: Factors affecting their trajectories, learning at the boundaries and identity development. *Industry and Higher Education* 21 (3): 195–210.

Wasburn-Moses, L. 2007. Minority students' perceptions of their doctoral programs in special education. *Journal of Teacher Education* 58 (5): 456–469.

Wright, L., E. Lange, and J. Da Costa. 2009. Facilitating adult learning and a researcher identity through a higher education pedagogical process'. *US-China Education Review* 6, 11, 60: 1–16.

Part V

Postgraduate Careers

Institutional Strategies for Developing Postgraduate Research Students' Teaching and Communication Capabilities

26

Elizabeth A. Beckmann and Abby Cathcart

Contents

Abstract

Today's postgraduate research students will be tomorrow's academics and the future leaders of higher education institutions as well as significant contributors to business and society. In Europe, doctorate-trained researchers are essential to "smart, sustainable, and inclusive growth," while in Southern Africa, East Asia, and Latin America, research students are considered central to the development of "knowledge societies" (Jorgenson 2012).

With rapidly changing conceptualizations of academic work, postgraduate research students should be acknowledged as emergent academics whose experiences during candidature will strongly influence their future paths. How should universities prepare research students effectively for academic roles, especially as future leaders of teaching?

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Well-developed teaching capabilities are vital for doctoral students who are already teaching or who anticipate an academic career. The communication and feedback skills central to good teaching are also invaluable in most other careers. This chapter outlines the core teaching roles in Australia's universities that doctoral students are currently playing, and will play in the future, and argues that investment in teaching development for research students is a crucial factor in teaching quality. Next, the chapter explores diverse teaching development strategies that institutions can use, drawing on examples of good practice from Australia that are already showing excellent outcomes in fostering and developing high-quality teaching skills as part of an infrastructure of effective and comprehensive postgraduate education.

Keywords
PhD · University Teaching · Academic development · Postdoctoral Careers

Introduction

The focus of postgraduate education and research in the global arena is shifting. Conceptualizations of academic work are changing rapidly, responding to global drivers for workforce development, internationalization, quality and performance measurement, and technology (Coates and Goedegebuure 2013; Edwards and Smith 2010; Enders and de Weert 2009). The original dominance of the USA, Europe, Australasia, and Japan in attracting both domestic and international postgraduate students is changing. Countries such as Brazil, China, India, and others in Latin America, Asia, Africa, and the Middle East are investing heavily in graduate education at home at the same time that they are emphasizing international collaboration and sending increasing numbers of research students overseas to bring back knowledge and skills (Jørgensen 2012, p. 8).

Realization of the scope for highly knowledgeable, internationally experienced, and fully qualified people has fueled a boom in postgraduate demand and supply, so that the number of postgraduate research students has increased significantly in most countries of the world (Group of Eight 2013). However, there has not been a concomitant increase in the number of research and academic positions available in higher education institutions. Yet the common aspiration, even expectation, of research students (especially those in research-intensive or highly research-active universities) is that they will progress into a research-focused career, often in academia. For example, more than 80% of Oxford University research students reported that they were likely to pursue an academic career (Trigwell and Dunbar-Goddett 2005, pp. 48–49).

In Australia, the first sector-wide survey into the career challenges and work experiences of postgraduate research students found that almost two out of every three, including international students, anticipated moving into an academic career (Edwards et al. 2011). Those involved in graduate education often feel that such career expectations must be countered, and more realistic expectations promoted

(see, e.g., Jackson and Michelson 2014). Discussion often centers on the need for institutions to ensure that doctoral and other research graduates leave their studies with skill sets that are not only research-focused but also highly suited to working in non-research careers (Bexley et al. 2013; Cyranoski et al. 2011; Jørgensen 2012).

Nevertheless, demand within academia for these newly qualified researchers does exist. First, many higher education institutions worldwide are requiring almost all their academics to have PhDs within the next decade, which means that many current research students are in fact experienced academics upgrading their research capabilities, and will return to academia on completion (Jørgensen 2012; Group of Eight 2013). Also, with more than half the academic staff in most Western countries reaching retirement age in the next 15 years (Beattie and Smith 2013; Danson and Gilmore 2013; Koopman-Boyden and Macdonald 2003; Larkin and Neumann 2013), one can expect a steady stream of research students moving into new academic careers in the next couple of decades, although the nature of these careers may be quite different to those existing now. For many countries in Latin America, Asia, and Africa especially, most new and returning academics will have studied for their doctorates overseas, especially in the USA, the UK, and Australasia (Jørgensen 2012), so the internationalization of research student experience, and the implicit influence of international institutions on professional academic development strategies, will be notable.

The relative emphasis on teaching, and on the importance of teaching skills among new academics, will be one such area of influence. Jørgensen (2012, p. 8) notes that "emerging economies face the challenge of educating large cohorts as well as addressing ambitions to flourish as knowledge economies." In Southern Africa, for example, universities tend to focus two thirds of their resources on teaching, so research students returning as qualified academics are very likely to be heavily involved in teaching, while in Latin America, 90% of higher education institutions engage solely in teaching (Jørgensen 2012, p. 43). Internationally, the input of the current and immediate future cohorts of research students, once successfully qualified, will thus be central to any growth and reshaping of higher education in individual countries and worldwide. This input will require highly effective communication skills to allow positive engagement with the diverse stakeholders in knowledge societies, and especially to ensure successful explanations of research impact, as well as effective adult teaching skills in face to face and, increasingly, online higher education and research outreach settings.

That there is an urgent need for more effective and higher quality teaching for undergraduates is very clearly demonstrated by student feedback in many countries. To cite just one example, the 2012 survey by the UK National Union of Students (UKNUS) of more than 5000 students found that "teaching skills" were identified by 91% of respondents and "interactive group teaching sessions/tutorials" by 84%, as "very important" or "important" features of a good quality learning and teaching experience (UK National Union of Students 2012). This contrasted with 48% identifying a "lecturer's research record" in the same way. The UKNUS survey also found that students wanted "more interactive classes" so that they more effectively develop peer relationships, which they linked to future employability.

About 50% of students reported that more interactive/group teaching sessions would improve their learning experience, while 43% wanted more individual tutorials, and 42% wanted more contact time with a personal tutor (UK National Union of Students 2012).

All these attributes of good teaching depend not only on the availability and resourcing of numbers of teaching staff but also on the capabilities of such staff to deliver quality outcomes as higher education teachers. Based on previous research on the undergraduate learning experience at Oxford, Trigwell and Dunbar-Goddett (2005, p. 48) were sure of "the ability of the undergraduate students to assess differences between teaching of less and more experienced teachers." The UK National Union of Students also reported that undergraduates were clear about the characteristics of good teachers (specialist in their subject, experienced in their subject in the working world, approachable, accessible, passionate about their subject, organized, confident in using interactive technology and visual aids, sense of humor) and poor teachers (lacking confidence; poor communicator, e.g., likely to just read out lecture notes; tend to overload students with information; unprofessional behavior; patronizing; not encouraging; assuming too much pre-existing knowledge).

This evidence supports the contention that it is crucial for universities to prepare their research student cohorts as well as possible for their future leadership roles, for the sake of future quality learning outcomes at institutional, national, and international levels. For this to happen, institutions must focus on providing today's research students with training not only in research skills, and the so-called "transferable" skills of employability, but also in advanced communication and specialized university teaching skills more broadly.

Traditionally, and still very much the case in some institutions, research students understood that teaching would very much be part of their expected activity. Anderson and Swazey (1998) found that 71% of surveyed graduate students identified a desire to teach in higher education as a "very" or "somewhat" important reason for deciding to go to graduate school (compared to "desire for knowledge" 99%, "desire to do research" 94%, "desire to benefit others through this work" 82%, career-related 44%). However, there is certainly a cost-benefit aspect to what some would see as "diverting" research students away from their research outcomes in a world where attrition rates are high. Only 73% of UK students who started full-time doctoral study in 2010–2011 are expected to obtain a PhD within 7 years (HEFCE 2013), and the situation is reportedly even worse in North America and Europe (The Economist 2010). With pressures high for research students to complete their studies in the minimum possible timeframe, it is not surprising that some supervisors discourage their students from teaching (Jepsen et al. 2013) and argue that the development of teaching and advanced communication skills is a distraction from the primary goal of publishing research.

The evidence suggests, however, that research students are already exerting a key influence on undergraduate student learning in many institutions, with many research students being employed by universities as tutors (Beaton and Gilbert 2013; Brightman 2009; Probert 2014). Those institutions are failing in their duties

to their undergraduates if research students are not provided with at least adequate development in teaching. In Australia, 45% of research students report teaching at the university at the same time that they are undertaking their studies (Edwards et al. 2011), very similar to the proportion at Oxford (46%, Trigwell and Dunbar-Goddett 2005, p. 48). Almost two thirds of early career academics in New Zealand report having gained tutoring experience, and half some lecturing experience, during their research studies, with a strong correlation between teaching experience during the doctorate and subsequent teaching confidence as an academic (Sutherland et al. 2013, p. 34).

However, there are also critical gaps in the support and development of that teaching (McCormack and Kelly 2013; Parsons et al. 2012). Both domestic and international PhD students may express feelings of inadequacy and isolation in relation to their current teaching responsibilities and their intended academic roles. International doctoral students particularly can experience heightened feelings of anxiety during their studies as a result of cultural differences, language issues, and the paucity of support networks (Heng-Yu et al. 2008). Teaching can provide social connections, and create bonds of disciplinary interest, while teaching development can support research students as they transition into professional roles (Greer et al. 2016).

Many countries have formal or informal standards for university teaching which encourage the development of teaching skills. The UK has its *UK Professional Standards Framework for Teaching and Supporting Learning in Higher Education* (Higher Education Academy 2011). Yet the UK National Union of Students (2013, p. 24) found that 22% of the postgraduates who teach had not received any kind of teaching training of development training beforehand and said they had no access to any training. In Australia, the *Higher Education Standards Framework (Threshold Standards) 2015* requires that teaching staff should have "skills in contemporary teaching, learning and assessment principles relevant to the discipline, their role, modes of delivery and the needs of particular student cohorts" (Australian Government 2015). Yet just 16% – fewer than one in seven – of surveyed postgraduate research students in Australia who reported academic career intentions had taken part in any form of professional teaching development during their studies, and most reported that their research degrees were "not particularly effective in preparing them for the task of university teaching" (Edwards et al. 2011). Even though most institutions do offer teaching development in some form, there is poor awareness of such opportunities to enhance teaching skills. Some 54% of Australian research students did not know whether their institution offered any training related to university teaching (Edwards et al. 2011), and 40% of early career academics surveyed in New Zealand were unaware that the institution that employed them as teachers also provided opportunities for them to gain higher education teaching qualifications (Sutherland et al. 2013, p. 36).

In summary, many postgraduate research students are teaching while they are studying, and many see their future in academia involving teaching responsibilities. However, relatively few know about opportunities for professional development in teaching in their institutions, and even fewer take up those opportunities to improve their teaching. This chapter will now consider how institutions can provide teaching

development opportunities specifically appropriate to research students' needs, by providing examples of existing institutional programs that develop postgraduate research students' teaching capabilities. In-depth case study examples will be drawn from the Australian National University and Queensland University of Technology, which have both been nationally recognized as exemplary for their teaching development. The Australian National University pioneered teaching development programs aimed specifically at research students from 1995, including the Pinnacle Program (Barthwal et al. 2011) and the Graduate Teaching Program (Australian Learning and Teaching Council Award for Services Supporting Student Learning 2008). The QUT Teaching Advantage program (Australian University Award for Program that Enhances Student Learning 2015; International Education Association of Australia's Best Practice Award 2015) is the most recent and most sophisticated development program aimed specifically at doctoral students as future academics.

Part 2: Institutional Programs and Strategies for Postgraduate Research Students

Teaching development opportunities exist on a continuum from fragmented, individualized, and self-directed through to comprehensive, coherent, tailored, and scholarly. Based on an analysis of 77 teaching development programs, Connolly et al. (2015) identified 12 core descriptive elements, grouped into (i) organizational context (scope, funding, longevity, coherence), (ii) program features (audience, selectivity, format, duration, engagement, and content focus), and (iii) program pedagogical practices (active learning and collective participation). The "audience" and "selectivity" elements are those that allow distinction between programs made available to research students as existing higher education teachers (such as programs aimed at tutor training), programs available to early career academics to which research students may or may not have access, and programs that are specifically developed for research students as future teaching academics.

Many research students are already teaching at the same time that they are involved in their own doctoral or other research studies but may not realize the opportunities offered by teaching development programs that are differentially aimed at "tutors" or "early career academics" rather than at "research students." The "scope," "coherence," and "content focus" elements of teaching development programs (Connolly et al. 2015) distinguish between those programs that simply aim for participants to acquire sufficient basic teaching skills so as not to compromise the university's teaching quality and programs that focus on university teachers' capabilities more broadly. Connolly et al. (2015) see the most sophisticated approaches to teaching development as having a central focus on pedagogical practices such as active learning and collective participation. The most sophisticated programs among the examples in the case studies provided here are those that are built around concepts such as cognitive apprenticeship, providing scaffolding to help research students move onto the first rung of the academy ladder.

Development to Improve Teaching

The teaching development programs most often available to research students are those generally aimed at improving *teaching* rather than *teachers* and especially at improving the basic skills of tutors or new academics. Most higher education institutions have these kinds of teaching development programs, although they are often only available to tenured and/or contract/sessional academic staff, such as tutors, so only research students who have these labels can access such opportunities. These programs are often delivered "just in time" (e.g., during the first semester/experience of tutoring) and in the form of one-off or loosely connected activities. They often provide access to institution-specific policies and practices as well as "tips and tricks" and "how to" advice, designed to make the tutor's work more effective and efficient. While some pedagogical theory may be included, this is usually limited to very functional aspects and is often distilled through secondary literature. In this category, there is often a focus on face to discussions and the beginnings of reflective practice, but rarely any formal assessment, although there are exceptions.

Case Study 1: A Program to Improve Teaching

From 1995 to 2012, the ANU Graduate Teaching Program (GTP) was offered specifically to doctoral students newly employed as tutors (Vickers 2008). Designed by John Ballard and Trevor Vickers, the GTP was designed with a coherent "support group" approach to present "just-in-time" contextualized ideas and approaches as a weekly session throughout the 12 teaching weeks of the tutors' first semester. The weekly frequency had two purposes. First, it allowed the tutors to be "drip-fed" ideas as their experience and confidence grew, so they were able to be more receptive to more complex ideas about teaching and learning as time went on, and their personal experience of tutoring increased. Thus the first week was designed around ideas relevant to the first tutorial of the semester, while skills associated with assessment and giving feedback to students came later in the semester. Second, the regular get-togethers always started with time for the tutors to discuss their previous week's experiences with one another, thus giving them a peer and "support group" mode to their learning. Participants recognized the value of this strategy:

> It was comforting to know that the GTP was on every week of teaching. It provided a sense of support and a continual reminder that you weren't out there alone working under pressures that no-one else had ever encountered. (Feedback from GTP participant 2011)

By 2012, more than 1000 ANU PhD students had been through the GTP, with a consequent beneficial impact on the quality of tutorial teaching across the university. As it was designed and delivered with research students as the audience, the GTP proved a very successful and powerful adjunct to the training that the participants received as researchers. Many of the participants subsequently went on to successful academic careers in teaching and educational leadership in Australian and overseas

universities and acknowledge the GTP's role in their early introduction to professional attitudes toward teaching in that success:

> [The value of the GTP] was enormous. Not only was I able to get sufficient experience and develop enough teaching skills to make myself competitive with international applicants, but as part of the selection process I had to give a demonstration seminar . . . if I hadn't done the GTP I would either have been too nervous to do anything, or I would have pitched the material at too advanced a level. (Feedback from GTP participant 2011)

An organizational restructure in 2012 saw the GTP reframed as *Principles of Tutoring and Demonstrating* (PTD) modules within the micro-credentialed ANU Academic Professional Development Program, which provides teaching development for all staff. The new PTD modules are aimed at "tutors": although these are mostly research (PhD) students, the modules do not focus on this characteristic. There are no assessments, but participants who attend ten modules (a "decamod") and write reflections online are rewarded with a certificate of completion. The individual modules nominally require 2 h of attendance, are flexible, and can be taken in any order at any time, with content aimed at practical exercises, and provide only sufficient theoretical background to justify participants adopting and practicing fairly straightforward concepts and skills (e.g., questioning rather than telling, understanding the importance of assessment criteria and marking moderation, giving constructive feedback, understanding when to use appropriate technologies, self- and external evaluation of teaching: G. O'Grady, pers. comm. 2016).

Individual modules rely on discursive engagement, small group discussion, skill practice, peer observation, and encouraging participants to build peer relationships for future support. While the teaching development content is relatively simple, the participants (who are already being paid to teach at the university) are grateful and willing recipients of the knowledge, as this feedback indicates:

> Every module provided me with a set of exercises, ideas and practice examples which I could apply to my weekly tutorials. (Anonymous PTD participant feedback 2016)

> Every module was a great opportunity to master my skills and learn about new things. I guess the students would have the last say on this, but I truly believe I have become a better tutor thanks to the course. (Anonymous PTD participant feedback 2016)

The PTD modules run two to four times per year, in weekly modes during semesters like its GTP predecessor and also in intensive modes between semesters. More than 500 research students have accessed PTD modules since they were initiated in 2013, with more than 350 having gained a ten-module certificate.

In 2016, Professor Lilia Ferrario, Associate Director Education for Mathematics, helped develop a similar set of modules specifically for ANU tutors of mathematics (Ferrario and Beckmann 2016). As well as PTD-style modules such as peer observation, discipline-based ideas and resources were also drawn from the Australian Mathematical Society online modules (www.austms.org.au/Unit+organisation) originally developed through a national research project. Six modules are fully online,

and others blended, which provides even more flexibility. The discipline-based focus has been very successful and is being rolled out to other sciences.

Participants in all the ANU courses for tutors are also encouraged to apply, through the university's accredited pathway, for international professional recognition in university teaching as an Associate Fellow of the Higher Education Academy (Beckmann 2016). This provides an incentive for completion and in-depth reflection, and provides PhD students with an important additional string to their career bow.

Development to Improve Teachers

Other common approaches to teaching development programs are those that focus more holistically on the university academic as a teacher and are often directed specifically at engaging new or early career teaching academics with both scholarly teaching and the scholarship of teaching and learning (e.g., see Chalmers 2015; Hanbury et al. 2008; Parsons et al. 2012). Such programs generally focus on the key concepts – reflective practice, constructive alignment, student approaches to learning, the scholarship of teaching, and the broad topic of assessment – that are deemed especially important in higher education (Kandlbinder and Peseta 2009). Institutions may use these programs to provide baseline teaching standards for their teaching staff. Compulsory or probation-required "Foundations" programs often constitute the first course in a Graduate Certificate in Higher Education or similar postgraduate course and may be subject to formal assessment in that context (Hicks et al. 2010). At QUT, for example, all new early career academic staff must complete a Graduate Certificate in Academic Practice during their 2-year probationary period, which has now been accredited by the UK Higher Education Academy (HEA) and leads to recognition as a Fellow of the HEA. In some institutions, research students with significant teaching experience may be allowed to participate in Foundations and Graduate Certificate programs. At ANU, doctoral students are encouraged to participate in the ANU *Foundations of University Teaching and Learning* modules, for example, but they are not the target audience.

Developing Future Teaching Academics

Programs that are aimed specifically at building research students' capabilities as teaching academics are much rarer than other forms of teaching development, because they require significant resourcing, and have research student development as their main focus rather than the institution's teaching quality or academics as scholarly teachers. Nevertheless, there are some notable examples in this category, such as the Pinnacle program at the Australian National University (Bathwal et al. 2011), the Academic Internship program at Flinders University (Luzeckyj and Hood 2015), and the Teaching Advantage program at QUT (Greer et al. 2016). In these programs, not only are postgraduate research students the primary audience, but the focus moves away from teaching skills for the sake of the institution or the individual

into developing individual participants as future members of the academy. The curriculum tends to be much more coherent, including not only all the relevant pedagogical materials already identified in the previous two categories but also practical teaching experiences and discussion of what is considered to constitute "expert" academic practice.

Case Study 2: A Program to Develop Future Academics

The Teaching Advantage (TA) program at QUT, Brisbane, Australia, was developed by academics Dominique Greer, Larry Neale, and Abby Cathcart, who were concerned that existing institutional provision was insufficient for the needs of doctoral students who wanted an academic career. TA specifically prepares doctoral students for their current and future university teaching roles. Open to domestic and international doctoral students from all faculties, TA was designed to fill the gap between sessional academic (tutor) training that might be available early in doctoral candidature and academic developmental programs that might be offered once candidates secure their first academic position (such as the very competitive QUT Early Career Academic Development program).

Since its inception in 2011 with just eight students from the QUT Business School, success has seen demand grow, so that the program now prepares more than 100 students annually, from all faculties, for prospective academic career paths. This unique program, imbued with a rich diversity of approaches to practice based in authentic academic experience, has been recognized with several awards, as described earlier. The program team have also delivered elements of the program at other institutions nationally and internationally. The systematic, competency-based Teaching Advantage program has been extensively documented throughout its development (Cathcart et al. 2014; Greer et al. 2016). The program's intensity and distinctiveness lie in the way it engages doctoral students in a community of inquiry with peers and experts through focused learning activities, underpinned by a cognitive apprenticeship framework (Collins et al. 1991), a critically reflective focus on alternative pedagogies and educational contexts, and input from key stakeholders, including academics and employers.

To make usually implicit teaching strategies more explicit, TA provides six workshops, with each cohort encouraged to form a community of inquiry. Within the workshops, students engage in blended and experiential learning activities and discussions to unpack practical and scholarly approaches to teaching, course (unit) coordination, and progression in academic careers. The doctoral candidates who apply to TA are encouraged to use their inquiries to reflect on their practice and build evidence for a teaching portfolio. Engaging in a community of inquiry allows research students to build and/or reinforce their professional sense of self by socializing with other doctoral candidates at various stages of their candidature (Austin 2009). This scholarly approach, which "works to make thinking visible" (Collins et al. 1991, p. 6), allows research students to co-construct their learning by focusing on problems experienced by members of the community and exploring possible solutions. Significantly, the deliberate construction of an international cohort of scholars reflects the truly international nature of teaching at QUT and at many other universities worldwide.

To make TA sustainable, there are two formats: a monthly delivery mode and an intensive delivery mode. Both formats combine the use of "flipped classroom" pedagogies, digital learning environments, and face-to-face workshops. The intensive mode works most effectively for overseas delivery, and a tailored program "TA Global" has been provided to students in China and Thailand.

Three themes that represent generic competencies across disciplines, institutions, and contexts drive the program's design. These themes are (i) skills for course/unit coordination (including constructive alignment and managing teaching teams), (ii) teaching (including principles of effective learning, personal teaching styles, and managing the classroom), and (iii) managing an academic career (including gathering evidence for a teaching portfolio and applying for academic positions that involve teaching). Structurally, the workshops model diverse and inclusive approaches to engaging students. For example, audience response technologies enable students who lack confidence, or prefer not to speak out for social or cultural reasons, to have a voice. The experiential learning activities in the workshops use six methods derived from cognitive apprenticeship, modeling, coaching, scaffolding, articulating, reflecting, and exploring (Collins et al. 1991), all of which align to key benchmarks.

A particular strength of TA has been its focus on access for diverse groups including international doctoral students, with students from 29 countries having been involved to date. The different cultural and pedagogical contexts can often disadvantage international doctoral students both in their capacity to teach well (or at all) during their studies and their capacity to build an academic career once they graduate. Several of the TA international student participants reported having been unable to secure sessional teaching experience. Analysis of feedforward and class discussion about the key teaching challenges of TA participants indicated high levels of anxiety about cultural differences from international doctoral candidates. After successful completion of TA, however, doctoral graduates have secured jobs not only in Australia but also in China, England, Saudi Arabia, Scotland, Sri Lanka, Taiwan, and Vietnam.

The key to making the program sustainable was to ensure that it had widespread support at a strategic level. The program team deliberately adopted a scholarly approach to evidencing the impact of TA on the participants, the students that they taught, and the institution more broadly. This data was analyzed in relation to student evaluations and academic self-efficacy, was published (Cathcart et al. 2014; Greer et al. 2016), and was used to make the case for ongoing funding and support. Doctoral student development in teaching often falls between institutional gaps due to governance structures. For example, at QUT postgraduate research training falls under the auspices of the Deputy Vice-Chancellor (Research), whereas teaching development is led through the office of the Deputy Vice-Chancellor (Learning and Teaching). In recognition of this, a unique tripartite funding arrangement was agreed between the DVC (Research), DVC (Learning and Teaching), and DVC (Academic).

To facilitate international recognition for students who have completed TA, the program has been accredited by the UK Higher Education Academy (HEA) and is a pathway to Associate Fellowship. This means that on completing TA, participants

are able to support a claim for professional status as a university educator based on the material they develop through the program. This transferable recognition has been an important way of both evidencing individual achievements in learning and teaching and demonstrating a commitment to high-quality teaching when applying for academic jobs.

The program uses a blended approach to teaching and provides a wide range of online resources so that students can continue to engage with the curriculum and the community after the face-to-face workshops are over. The deep impact on learners and the sustainability of the community are evidenced by more than 250 alumni who actively participate in the TA LinkedIn site. This community has become self-supporting, with alumni who are now teaching overseas offering advice to the current cohort and acting as mentors as they develop their applications for Associate Fellowship of the HEA (Fig. 1).

Discussion: Institutional Good Practice in Teaching Development Programs for Research Students

Many universities provide development programs for their teaching staff to improve the most basic levels of teaching. While they are often attended by research students who are tutors, they are not aimed at research students per se and do not constitute a deliberate adjunct to researcher training. In this approach to teaching development, an institution expects each individual research student to take responsibility for his or her own professional development in teaching, which is individualized and self-directed (in the sense that the student decides which opportunities to take up). However, in the interests of improving teaching quality, and hence undergraduate learning, an institution should accept responsibility of promoting these teaching development opportunities specifically to research students. An institution's minimum actions in this context would therefore be to identify all its teaching development opportunities, regardless of their original target audience, clarify any specific barriers to research student participation (such as costs or prerequisites that are inappropriate or unattainable by research students), and decide which opportunities are (or can be made) geographically, intellectually, and financially accessible to research students.

Ideally, however, rather than simply allowing those research students who are tutoring to participate in existing development opportunities, institutions should consider investing in teaching development programs that have a strong focus on developing research students as future academics. The rationale for making the more significant investment is that the more intensive and sophisticated programs – as illustrated here with the ANU and QUT case studies – improve research student completion of their studies, employability, and career outcomes, which are all institutional measures of success.

There are key features that such specialist programs require to be highly successful. First, scholarly research must be used to identify best practice approaches to teaching challenges, with this literature informing the development of evidence-

Organizational Context			
		Teaching Advantage (QUT)	**Tutoring programs (ANU)**
1	Scope	Institution-wide	Institution-wide and/or faculty-based.
2	Funding	Internal – jointly funded by Deputy Vice-Chancellor (Research), Deputy Vice-Chancellor (Learning and Teaching) and Senior Deputy Vice-Chancellor (Academic)	Internal – limited, included within normal budget for Teaching Unit
3	Longevity	Since 2011 - ongoing	Graduate Teaching Program (GTP) 1995-2012 Principles of Tutoring & Demonstrating (PTD) – since 2012 – ongoing Tutor Training for Mathematics (TTM) - since 2016 - ongoing
4	Coherence	Innovative and award-winning	GTP innovative and award-winning PTD and TTM fully coherent with other teaching development initiatives at the institution.
Program Features			
5	Audience	**Doctoral students** who intend to pursue an academic career	Tutors of undergraduates or postgraduate coursework: usually research students, could be senior undergraduates
6	Selectivity	Open	Open
7	Format	Blended learning approach: 6 x 3 hour workshops offered in monthly or intensive modes	Blended learning approach: 10 x 2 hour modules offered in weekly or intensive modes
8	Duration	1 week to 6 months	Minimum 2 weeks, usually one semester
9	Engagement	Up to 36 hours (18 face-to-face)	GTP and PTD Up to 30 hours (20 face to face) TTM 20 hours (8)
10	Content focus [Learning Outcomes]	At the end of the workshop, reading and learning activities participants will have: **Skills for Teaching** that allow participants to: ● Explore and articulate a Teaching Philosophy informed by principles of effective learning. ● Engage students in learning through effective communication across a range of contexts. ● Use basic classroom and learning technologies to enhance student learning. **Skills for Coordination** that allow participants to:	**GTP** (Vickers, 2008) Primary aim: To help ensure that PhD students teaching in the university have a successful and enjoyable introduction to university teaching (Vickers, 2008) Secondary aims: ● allow participants to assess their interests in taking up a career in academic teaching ● improve participants' communication and small group leadership skills ● strengthen participants' CVs and employment prospects ● enhance the general quality of undergraduate teaching ● reduce research isolation and

Fig. 1 (continued)

		• Use a practical framework to constructively align elements of curriculum to support student learning. • Identify the elements of effective coordination. • Articulate pragmatic strategies to manage key challenges of coordination. **Skills for Forging an Academic Career** that allow participants to: • Draw on existing teaching activities and experiences to develop evidence for a teaching portfolio. • Identify key skills and attributes necessary for a successful teaching career and demonstrate a purposeful approach to acquiring them. • Collaborate effectively with peers to develop teaching practice.	integrate these participants more fully into the academic community of the University. **PTD** (G. O'Grady pers. Comm.) By the end of the course tutors will be able to: • Identify, differentiate and explain theories that inform the understanding and practice of tutoring • Demonstrate skills related to effective facilitation • Devise a lesson plan for a tutorial • Recognise how technology is impacting higher education • Appraise their own, and others, approaches to tutoring • Interpret how key institutional policies apply to tutoring • Infer how valid and reliable marking is linked to explicit criteria, and use criteria to inform effective student feedback • Formulate a teaching philosophy statement, and reflect upon their approach to learning • Plan how they will continue to learn as a teaching professional. **TTM** (Ferrario & Beckmann, 2016) • Review teaching and learning in the specific context of mathematics, including simple theory about mathematics teaching approaches • Engage in observation of peer mathematics tutors to gain more insight into diverse used of learning spaces and styles of tutoring • Consider diverse approaches to teaching problem-solving • Review issues of diversity and support in regard to university policies and services
Program Pedagogical Practices			
11	Active learning	Highly engaging, participative approach to content drawing on principles of active learning	Highly interactive learning, participatory and experiential learning
12	Collective participation	Strong collaborative focus based on cognitive apprenticeship and a community on inquiry	Small group collaboration and networking within individual modules, but usually limited to in-class co-operation; cohort model possible

Fig. 1 Exemplary practice in teaching development programs customized for research students (using the Teaching Development Program features identified by Connolly et al. (2015))

based teaching activities within the program. There also needs to be emphasis on relevant career-focused material, such as teaching portfolios, selection criteria, and academic or leadership-focused job interviews. Although there are many possible variations, many successful programs will have their basis in cognitive apprenticeship theory, which aims to make explicit the implicit logic and strategies of social learning that experienced teachers use in practice (Collins et al. 1991). This approach is designed to mimic in a group program the idealized, but rarely realized, situation whereby a doctoral student's research supervisor (or another academic mentor) gradually inducts the student into autonomous academic life, with equal focus on teaching and research.

Another key attribute of a successful teaching development program is that it is benchmarked against key domestic and international benchmarking frameworks (e.g., Chalmers et al. 2014; Higher Education Academy 2011), ideally with national or international professional recognition opportunities made available to participants. This approach, a characteristic of the QUT and ANU programs through their access to Higher Education Academy fellowships, ensures that the programs generate practitioners who are competent to minimum university teaching quality standards internationally. The Higher Education Academy (HEA) fellowship scheme is underpinned by the UK Professional Standards Framework (UKPSF). This outlines the areas of activity, professional values, and core knowledge that constitute effective teaching and support for learning. In recent years, the UKPSF has been adopted by a wide range of institutions outside the UK, including universities in Australia, New Zealand, China, the USA, Thailand, and the United Arab Emirates. This has led to a higher recognition of the benchmark and an emerging sense of a global community of HEA fellows.

One of the competencies that must be demonstrated in fellowship claims is in the use of learning and communication technologies. Certainly, all the case study programs described here avail themselves of the capacity of digital technologies (e.g., learning management systems, social media), to extend their reach and flexibility. Both the ANU Pinnacle and QUT Teaching Advantage programs have also made good use of audiovisual recordings to add another dimension to participants' understanding of themselves as communicators and their capacity to demonstrate their skills to future employers.

A key aim of teaching development programs is to improve teaching self-efficacy, that is, the confidence of the individual teacher that he or she can meet specific learning outcomes with a specific cohort in a specific disciplinary and institutional context (after Bandura 1997). One should therefore expect specialized and well-designed teaching development programs to increase self-efficacy in participants. This has been found both qualitatively in a study of a small sample of ANU participants in Pinnacle (Barthwal et al. 2011) and quantitatively in a larger sample in the QUT Teaching Advantage (TA) program. An evaluation using pre-TA and post-TA data collected from 156 TA alumni (2013–2014) via a validated self-efficacy measure (adapted from Hemmings and Kay 2009) showed that, regardless of their previous teaching experience, the TA participants reported significantly increased teaching self-efficacy ($p < 0.05$) for 21 teaching tasks (Greer et al. 2016).

A second key aim of teaching development is to develop a capacity for reflective practice. Again there is strong evidence that this has been accomplished to a significant degree by participants in the specialist doctoral programs such as Pinnacle and Teaching Advantage and to a lesser degree by the Category 1 and 2 programs. Both ANU and QUT participants in these programs are able to reflect on their practice in the context of the criterion-referenced UK Professional Standards Framework for Teaching and Supporting Learning in Higher Education in sufficient depth to gain professional recognition as Associate Fellows of the Higher Education Academy.

Another reason for having programs targeted specifically at postgraduate research students is to embed scholarly practice (Boyer 1990) and professionalize the PhD cohort. Dedicated programs, such as TA, give doctoral candidates a sense of belonging to their wider professional community, by creating spaces for open discussion of teaching practices and philosophies in the context of disciplinary and cross-disciplinary learning. The anticipatory socialization in programs directed specifically at research students integrates participants into the academic community and develops more holistic "identities as researchers, scholars and educators" (Pryce et al. 2011, p. 467). Individual anxieties about teaching, which in isolation could become overwhelming, instead become shared opportunities for growth (Viskovic 2006).

Finally, a key attribute of these programs should be their transferability. Beyond specific institution-specific policies and practices, all programs with these attributes should be easily adapted for delivery elsewhere. The evidence for this already exists in the successful provision of the QUT Teaching Advantage program in China, Thailand, and Indonesia and in the parallel evolution seen in the GTP, Pinnacle and Teaching Advantage programs across two diverse universities. Rather than reinventing the wheel, universities could share the resourcing and development of such programs, with the benefits being shared competencies.

Conclusion

Postgraduate research students not only undertake a significant proportion of undergraduate teaching during their studies but are also likely to become the future leaders of the academy. In this chapter, teaching capabilities have been identified as key attributes for doctoral students who are already teaching or who intend to pursue an academic career. All universities should be taking the initiative in supporting those students to develop teaching and communication skills. This would prepare these postgraduate students more effectively for a range of careers, including integrated academic positions, but would also improve the quality of educational provision in Australian higher education, raise teaching standards, and enhance the learning outcomes for students.

The teaching development programs for research students that are outlined here enable institutions and academic developers to reflect on their own context and explore institutional strategies that would foster and develop high-quality teaching skills as part of an infrastructure of effective comprehensive postgraduate education.

References

Anderson, M.S., and J.P. Swazey. 1998. Reflections on the graduate student experience: An overview. *New Directions in Higher Education* 101: 3–13.

Austin, A.E. 2009. Cognitive apprenticeship theory and its implications for doctoral education: A case example from a doctoral program in higher and adult education. *International Journal for Academic Development* 14 (3): 173–183.

Australian Government. 2015. Higher education standards framework (Threshold Standards), Tertiary Education Quality & Standards Agency Act 2011 C.F.R. § 58 (1) 2015.

Bandura, A. 1997. *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Barthwal, A., D. Chenoweth, C. Day, M. Hughes, E. Kirk, S. Kitson, T. Limpanuparb, P. Marshall, and J. Shellard. 2011. Pinnacle: Evaluation of the graduate teacher training program at the ANU. *Australian Universities Review* 53 (1): 14–20.

Beaton, F., and A. Gilbert. 2013. *Developing effective part-time teachers in higher education: New approaches to professional development*. London: Routledge.

Beattie, V., and S.J. Smith. 2013. *Today's PhD students – Is there a future generation of accounting academics or are they a dying breed? A UK perspective.* Institute of Chartered Accountants of Scotland (ICAS). https://www.icas.com/technical-resources/publication-is-there-a-future-generation-of-accounting-academics

Beckmann, E.A. 2016. Teaching excellence: Recognising the many as well as the few. Paper presented at Higher Education Research and Development Society of Australasia Conference, Fremantle, Western Australia, 5–7 July 2016. http://herdsa2016.org/images/188_Beckmann__RefPaper.pdf

Bexley, E., S. Arkoudis, and R. James. 2013. The motivations, values and future plans of Australian academics. *Higher Education* 65 (3): 385–400.

Boyer, E.L. 1990. *Scholarship reconsidered: Priorities of the professoriate*. San Fransisco: Jossey-Bass.

Brightman, H. 2009. The need for teaching doctoral students how to teach. *International Journal of Doctoral Studies* 4: 1–11.

Cathcart, A., D.A. Greer, and L. Neale. 2014. Learner-focused evaluation cycles: Facilitating learning using feedforward, concurrent and feedback evaluation. *Assessment & Evaluation in Higher Education* 39 (7): 790–802.

Chalmers, D. 2015. The measurement and impact of university teacher development programs. *Educare* 51 (1): 53–80.

Chalmers, D., R. Cummings, S. Elliott, S. Stoney, B. Tucker, R. Wicking, and T. de St Jorre. 2014. *Australian university teaching criteria and standards project*. Sydney: Office for Learning and Teaching.

Coates, H., and L. Goedegebuure. 2013. Recasting the academic workforce: Why the attractiveness of the academic profession needs to be increased and eight possible strategies for how to go about this from an Australian perspective. *Higher Education* 64 (6): 875–889.

Collins, A., J.S. Brown, and A. Holum. 1991. Cognitive apprenticeship: Making things visible. *American Educator* 15 (3): 6–11. 38–46.

Connolly, M.R., J.N. Savoy, Y.-G. Lee, and L.B. Hill. 2015. *How teaching development programs can improve undergraduate education*. Wisconsin: Wisconsin Centre For Education Research, University of Wisconsin-Madison. http://lsfss.wceruw.org/documents/Building_a_Better_Future_STEM_Faculty.pdf.

Cyranoski, D., N. Gilbert, H. Ledford, A. Nayar, and M. Yahia. 2011. Education: The PhD factory. *Nature* 472: 276–279. https://doi.org/10.1038/472276a.

Danson, M., and K. Gilmore. 2013. Employability and flexible retirement: Variations in academia in an age of austerity. *Geoforum* 43 (6): 1323–1332.

Edwards, D., and T.F. Smith. 2010. Supply issues for science academics in Australia. *Higher Education* 60 (1): 19–32.

Edwards, D., E. Bexley, and S. Richardson. 2011. *Regenerating the academic workforce: The careers, intentions and motivations of higher degree research students in Australia: Findings of the NRSS.* ACER. http://research.acer.edu.au/.

Enders, J. and E de Weert. 2009. Towards a T-shaped profession: Academic work and career in the knowledge society. In The changing face of academic life: Analytical and comparative perspectives, ed. J. Enders, E. de Weert and E. de Weert, 251–272. Palgrave Mac Millan, Basingstoke.

Ferrario, L., and E.A. Beckmann. 2016. Teaching maths tutors to teach: Modules, reflective practice and professional recognition. Poster. *Australian Conference on Science and Mathematics Education, September 2016, Brisbane*.

Greer, D., A. Cathcart, and L. Neale. 2016. Helping doctoral students teach: Transitioning to early career academia through cognitive apprenticeship. *Higher Education Research and Development* 35 (4): 712–726.

Group of Eight. 2013. *The changing PhD*. Canberra: Group of Eight. https://go8.edu.au/sites/default/files/docs/the-changing-phd_final.pdf.

Hanbury, A., M. Prosser, and M. Rickinson. 2008. The differential impact of UK accredited teaching development programmes on academics' approaches to teaching. *Studies in Higher Education* 33 (4): 469–483. https://doi.org/10.1080/03075070802211844.

Higher Education Funding Council of England (HEFCE). 2013. *Rates of qualification from postgraduate research degrees: Projected study outcomes of full-time students starting postgraduate research degrees in 2010–11*. London: Higher Education Funding Council of England. Available from http://www.hefce.ac.uk/pubs/year/2013/201317/.

Hemmings, B., and R. Kay. 2009. Lecturer self efficacy: Its related dimensions and the influence of gender and qualifications. *Issues in Educational Research* 19 (3): 243–254.

Heng-Yu, K., M.K.E. Lahman, Y. Hsin-Te, and C. Yi-Chia. 2008. Into the academy: Preparing and mentoring international doctoral students. *Educational Technology Research & Development* 56 (3): 365–377.

Hicks, M., H. Smigiel, G. Wilson, and A. Luzeckyj. 2010. *Preparing academics to teach in higher education.* Report to Australian Learning & Teaching Council. https://www.flinders.edu.au/pathe/ALTC_report_final.pdf.

Higher Education Academy. 2011. *UK Professional Standards Framework for teaching and supporting learning in higher education*. York: Higher Education Academy.

Jackson, D., and G. Michelson. 2014. Factors influencing the employment of Australian PhD graduates. *Studies in Higher Education* 40 (9): 1660–1678.

Jepsen, D.M., M.M. Varhegyi, and D. Edwards. 2013. Academics' attitudes towards PhD students' teaching: Preparing research higher degree students for an academic career. *Journal of Higher Education Policy and Management* 34 (6): 629–645.

Jørgensen, T.E. 2012. *CODOC: Cooperation on doctoral education between Africa, Asia, Latin America and Europe*. Brussels: European University Association. http://www.eua.be/Libraries/publications-homepage-list/EUA_CODOC_web.

Kandlbinder, P., and T. Peseta. 2009. Key concepts in postgraduate certificates in higher education teaching and learning in Australasia and the United Kingdom. *International Journal for Academic Development* 14 (1): 19–31.

Koopman-Boyden, P.G., and L. Macdonald. 2003. Ageing, Work performance and managing ageing academics. *Journal of Higher Education Policy and Management* 25 (1): 29–40.

Larkin, J., and R. Neumann. 2013. Ageing academics: Workforce priorities for universities [online]. *International Journal of Employment Studies* 20 (1): 3–24.

Luzeckyj, A.M., and C.D. Hood. 2015. Developing teaching capability – The missing link for global employability of post-doctoral students? Conference Proceedings of *Research and Development in Higher Education: Learning for Life and Work in a Complex World*, Melbourne, July 2015, 305–318. Milperra: Higher Education Research and Development Society of Australasia.

McCormack, C., and P. Kelly. 2013. How do we know it works? Designing support interventions to meet the real needs of new part-time lecturers. In *Developing effective part-time teachers in*

higher education: New approaches to professional development, ed. F. Beaton and A. Gilbert, 94–113. Routledge: London.

Parsons, D., I. Hill, J. Holland, and D. Willis. 2012. *Impact of teaching development programmes in higher education.* Retrieved from https://www.heacademy.ac.uk/impact-teaching-development-programmes-literature-review.

Probert, B. 2014. *Becoming a university teacher: The role of the PhD*. Office for Learning and Teaching Discussion Paper 3, October 2014 (28 pp.). Australia: DIISRTE. URL.

Pryce, J.M., A. Ainbinder, A.V. Werner-Lin, T.A. Browne, and C. Smithgall. 2011. Teaching future teachers: A model workshop for doctoral education. *Journal of Teaching in Social Work* 31 (4): 457–469.

Sutherland, K., M. Wilson, and P. Williams. 2013. *Success in Academia? The experiences of early career academics in New Zealand universities*. Wellington: Ako Aotearoa. https://akoaotearoa.ac.nz/early-career-academics.

The Economist. 2010. The disposable academic: Why doing a PhD is often a waste of time. *The Economist*, Dec 16.

Trigwell, K., and H. Dunbar-Goddet. 2005. *The research experience of postgraduate research students at the University of Oxford*. Oxford: Institute for the Advancement of University Learning, University of Oxford. Available from http://supervision.learning.ox.ac.uk/sites/default/files/The_Research_Experience_of_Postgraduate_Research_Students_at_Oxford.pdf.

UK National Union of Students. 2012. *Student experience research 2012 part 1: Teaching and learning*. London: National Union of Students. Available from http://www.nus.org.uk/PageFiles/12238/2012_NUS_QAA_Teaching_and_Learning.pdf.

UK National Union of Students. 2013. *Postgraduates who teach*. London: National Union of Students. Available from http://www.nus.org.uk/PageFiles/12238/1654-NUS_PostgradTeachingSurvey_v3.pdf.

Vickers, T. 2008. ALTC – awards for programs that enhance learning. Application. Available from http://edcasestudies.chelt.anu.edu.au/sites/edcasestudies.cedam.anu.edu.au/files/application_files/Vickers_program_2008.pdf.

Viskovic, A. 2006. Becoming a tertiary teacher: Learning in communities of practice. *Higher Education Research and Development* 25 (4): 323–339.

Toward a New Narrative of Postgraduate Career

27

Jane Artess and Tristram Hooley

Contents

Abstract

This chapter examines the relationship between the postgraduate taught (PGT) student experience and career development. It argues that career development is a critical theme which draws together all aspects of the PGT experience. PGT students overwhelmingly choose to undertake postgraduate programs for career reasons. Their participation on program is best understood as a space through which they can pursue their career development. Finally, their transition from PGT study to the labor market is explored. While PGT study offers a clear advantage in the labor market, this is neither inevitable nor equally distributed.

The chapter argues that despite the complexity of the return on investment, PGT programs continue to offer an important opportunity for individuals to develop their careers. This is true for both continuers, who move straight from

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undergraduate study, and returners, who reenter higher education after a period in the workforce. However, it also notes that access to PGT study is structured along familiar lines of social advantage.

The chapter discusses the implications for higher education providers of this picture of PGT as a career development intervention. It is argued that providers need to embrace the focus on career development and to ensure that their programs help students to realize their aspirations and to transform their PGT qualifications into real-world opportunities.

Keywords
Postgraduate · Postgraduate taught · Career · Career development · Higher Education · Employability

Introduction

This chapter explores the student experience of engagement in postgraduate taught (PGT) study. It argues that the process of PGT study is best conceptualized as part of a process of the individual's career development. We use the term "career development" to describe the process by which individuals navigate through their life, learning, and work in order to achieve the best outcomes that they are able to within the structural constraints in which they are operating. Career development is not simply about hierarchical progression in terms of money and status. While some individuals taking PGT courses may be seeking to increase their economic bargaining power through the development of their human capital, others will be seeking to retrain, engage in career switching, or find their way to a more personally meaningful or ethically satisfying life. Career development is a process rather than a particular outcome, and we argue that the decision to study at PGT level represents a purposeful investment of time by individuals in their careers. Understanding this career motivation is therefore critical for higher education providers (HEPs) that are involved in the provision of PGT study.

Our focus on career development should not be understood as a narrow utilitarianism. We are not seeking to situate postgraduate higher education as a link in the production chain whereby individuals are transformed into ideal workers to the specification of employers. The fact that individuals undertaking PGT study have a legitimate need to think about how their program of study fits into their wider aspirations can reinforce rather than negate the ideals of liberal education. Such education should encourage individuals, through a close engagement with their subject, to consider who they are and what they want from life and to make a critical assessment of the world. Such a view of PGT study fits with Pring's (1995) conception of "liberal vocationalism" which acknowledges the idea that education needs to prepare people to contribute economically through work and argues that this engagement with the vocational context of learning can offer a profound passageway into the kind of knowledge and expanded imagination that liberal education seeks to foster.

The chapter will argue that HEPs involved in the provision of PGT study need to have a clear understanding of how such programs contribute to students' career development. Research suggests that PGT students are strongly motivated by the expectation of enhanced career opportunities, of increasing their employability (Purcell et al. 2012) and that programs need to be designed in ways that support students to integrate PGT study with their existing careers (Mellors-Bourne et al. 2014).

The link between career development and PGT is threefold as (1) most students undertake postgraduate degrees because they want to develop their careers; (2) their engagement on course is strongly influenced by their career motivations; and (3) they are keen to move quickly from the end of their course into work. This raises three corresponding questions for HEPs: (1) how should PGT study be marketed and what information should be provided to support potential PGT students to decide whether to pursue a PGT degree and to integrate such a decision into their wider career building; (2) how should PGT degrees be organised and integrated into institutions to ensure that individuals can maximize their chance of career building while they are on course; and (3) how should institutions attend to the destinations of their PGT students following graduation and what kind of ongoing relationship should be built with these students.

Despite the critical importance that issues of career play in PGT study, the career development of PGT students has rarely been written about, and there is a lack of theoretical and evidential underpinning to the career development approach that is taken within PGT. Furthermore, it is important to note that the level of career support that is offered to PGT students is often very limited in comparison to their undergraduate counterparts. There may be many reasons for this, including the relative length of postgraduate courses compared to undergraduate courses, the opportunity that postgraduate study provides for vocationally oriented specialisation, and the assumption that postgraduate students are already decided upon their career trajectory. However, given the centrality of career development to PGT study, we will argue that it is important that higher education providers increase their focus on this issue.

This chapter will explore the student experience pre-course, on course, and post-course and then examine how HEPs can best respond to this. The chapter will principally draw on data and examples from the UK as well as on the wider literature to explore some ways forward.

Background: Understanding Postgraduate Taught Study in the UK

Postgraduate qualifications in the UK are aligned to descriptors established via the Bologna Process (Quality Assurance Agency 2008) and captured in the framework for qualifications of the European Higher Education Area (FQ-EHEA). The FQ-EHEA consists of three cycles of higher education, each of which has generic descriptors and specific abilities and achievements associated with completion of that cycle. While the nomenclature of these cycles varies across countries, they are commonly known as (1) undergraduate/bachelor's degrees, (2) postgraduate taught degrees

(including master's degrees) which we refer to in this chapter as PGT, and (3) research/doctoral degrees. While the FQ-EHEA only formally describes the three cycles of higher education within Europe, these three cycles are also recognizable in most higher education systems outside of Europe. This chapter will focus on the second of these cycles (PGT) and will explore how career development intersects with this postgraduate cycle.

For HEPs to successfully strategize their approach to PGT study, they need to understand the complexity of the PGT population. Postgraduate students in the UK are not a homogenous group pursuing a single type of postgraduate qualification; the diversity of their personal characteristics and the courses they undertake present real challenges for higher education administration.

PGT study in the UK is concerned with courses leading to qualifications that are not obtained primarily by research. Taught postgraduate courses typically lead to a master's qualification (e.g., Master of Arts (MA) or a Master of Science (MSc)) and often comprise staged or single awards (e.g., postgraduate certificate or diploma) for those who do not want to continue to full master's qualification. Some postgraduate courses are designed to achieve a postgraduate certificate or diploma, and the continuation of study to a master's qualification is optional or achievable at a later stage, with or without formal accreditation of prior learning. Taught postgraduate courses are often designed to prepare for a vocationally oriented specialism (e.g., Master of Education (MEd)). Some master's courses are integrated with undergraduate study and may confer the qualifier with entry to or credit toward a professional qualification (e.g., Master of Engineering (MEng)).

Bowman et al. (2005) describe PGT courses under three main headings: (1) vocational courses linked to or required for a specialized occupation (e.g., interpreting – where skilled linguists train students in interpreting), (2) semi-vocational courses relating to a broad occupational area (e.g., business), and (3) non-vocational courses (e.g., philosophy). It is also important to note that many PGT programs which do not appear to be vocational actually serve as a testing and training arena for those wishing to pursue an academic career.

In addition to the different types of postgraduate qualification that exist, it is also clear that participation in PGT study is influenced by a range of academic and nonacademic characteristics. There is considerable debate about a number of these characteristics, with researchers disagreeing about the patterns in relation to things like gender and ethnicity (possibly due to changing patterns over time). However, there is also some agreement, with most research (e.g., D'Aguiar and Harrison 2016; DBIS 2016; HEPI and The British Library 2010; Purcell et al. 2012; Stuart et al. 2008; Wakeling and Kyriacou 2010) suggesting that the PGT cohort is more likely, than the general student population, to:

- be high attaining;
- have had attended a high entry tariff/elite institutions or other specialist institution for their first degree;
- be drawn from certain academic subjects with applied and applied/vocational subjects being less likely to be studied at postgraduate level;

- be from a higher socioeconomic background;
- have access to greater financial resources;
- have both parents who have a degree;
- be an international student (i.e., non-UK domiciled);

Such findings suggest that those students who enter their undergraduate degrees in a more privileged position are more likely to progress to postgraduate studies. Research also suggests that there are complex interactions between these features with, for example, the country of origin of the student and the subject that they study at PGT level clearly associated (Artess et al. 2008).

There has been increasing concern in the UK about fluctuations in the number and types of graduates progressing to postgraduate study. Figure 1 shows how postgraduate numbers have changed in the UK over the last 15 years. There is considerable fluctuation in the numbers of both full-time and part-time students. It is not clear what is driving the shifts in these numbers; however, it seems likely that both policy changes such as the introduction of fees and the health of the wider graduate labor market are likely to exert an influence.

The concern about stagnant or falling numbers of postgraduate (and particularly part time PGT) students has developed momentum in the light of changes in student fees and a corresponding increase in the levels of graduate debt. The number of PGT students is of concern to government which has a policy interest in increasing the skill level of the population. In response to this concern, the UK government has introduced government-backed loans for PGT students. Previously postgraduate taught students have been predominantly self- or family funded, wholly or partly funded via institutional bursaries and/or employer contributions, or funded via a private sector loan at commercial rates of interest. The move to a state loan entitlement for postgraduate taught students has been welcomed by the higher

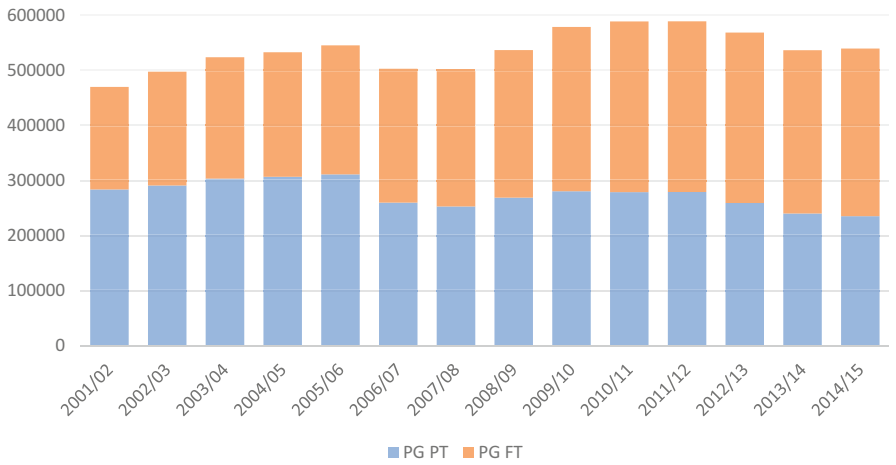


Fig. 1 UK postgraduate student numbers 2001–2015 (Data taken from HESA 2016)

education sector, but there is concern that students from lower socioeconomic groups are more likely to be risk averse and so less willing to add further to an already substantial undergraduate student loan debt. It remains to be seen whether the availability of postgraduate student loans will be the magic bullet that was hoped for to stop falling or flat-lining enrollments and encourage access to further study.

For HEPs the concern about PGT numbers is business critical. Postgraduate students and PGTs in particular have been an important income source for HEPs. A fall in PGT numbers has the potential to harm the viability of some HEPs. Consequently, HEPs need to focus on continuing to grow PGT study or at least ensuring that they are able to gain the largest share of the PGT market possible. In order to do this, they will need to clearly understand the motivation of prospective students and to develop both their marketing of programs and the student experience to fall in line with this.

Why Decide to Study at Postgraduate Taught Level?

Much of the literature which has examined students' decision-making about higher education has focused on how students choose between different institutions, subjects, and courses. Such accounts (e.g., Al-Fattal 2010; Padlee et al. 2010) tend to focus on the choices of prospective undergraduates and tend to view educational decision-making as a rational and linear process. However, it is possible to argue that this literature on undergraduate decision-making is of limited usefulness in relation to PGT study. The decision to study at PGT is still only taken by a minority and so the key decision moves from *where* and *what* to study to *whether* to study at PGT at all? Access to the PGT level is not equally distributed across the population as, in the UK at least, more advantaged students' typically progress to the PGT level. We have also noted that the level of engagement in PGT study rises and falls with changes in the economy and policy. It would therefore be dangerous for HEPs to assume that there is a stable PGT market which can be relied upon regardless of circumstance. Deciding to pursue a PGT program is something that most people do not decide to do, and so it is important for HEPs to think carefully about how they engage with prospective PGT students and what kinds of messages they offer them.

PGT decision-making is therefore very different from most undergraduate decision-making. Most students undertaking an undergraduate degree are guided through a well-established school to work transition process which is underpinned by a strong cultural assumption that undergraduate study confers access to clear labor market advantage. Those considering postgraduate study are not offered the same kind of supported transition, and there is no clear set of cultural understandings about what PGT study will offer. Although there is broadly a positive relationship between participation in postgraduate study and future employability, this relationship is neither straightforward nor linear (Artess et al. 2014). Consequently, prospective students often have to be engaged and persuaded that PGT is worthwhile.

For the cohort of students who are considering moving directly from undergraduate to PGT study (continuers), the process of decision-making is a dynamic one

(DBIS 2016). The DBIS analysis of longitudinal data collected through the Futuretrack project concluded that undergraduate students frequently change their minds about the idea of progressing to PGT as they approach the end of their studies. Some students who intended to study at PGT do not progress, while others who did not have that intention earlier in their undergraduate degree ultimately did move into PGT courses.

Among those who did proceed directly to postgraduate study, motivational factors expressed in their final year of study indicated that they felt that postgraduate study was essential for their future career (54.7%) and to access better career opportunities (61.5%). They were also motivated to develop more specialist knowledge and expertise (65.1%) and to continue studying at a higher level (69.9%). Some wanted to use postgraduate study to change direction (48.7%) or simply to defer getting a job (68.1%).

There is also a very important cohort of "returners" who come back to university for a PGT degree following a period in the labor market (Mellors-Bourne et al. 2014). Some evidence suggests that returners are typically underemployed and returning to study in an attempt to boost their earning potential (D'Aguiar and Harrison 2016). However, while upskilling may be an important motivation, it is clearly only among a number of reasons why students may return to PGT study later in their career. While some students may be upskilling, others will be reskilling in order to facilitate career and or lifestyle changes. Whether they are relatively higher or lower earners, many returners reenter higher education with work experience, with an established career trajectory, and with greater assets and earning potential than their undergraduate peers but also with considerable responsibilities typically including work, family, and home ownership. So while this returner group typically has greater financial resources, they also typically have less time, mobility, and willingness to experiment.

Just as with the undergraduate cohort, career decision-making for the returners seems to be a complex process. Mellors-Bourne et al. (2014) highlight the careful iterative process that returners go through when choosing postgraduate study. As with undergraduates it is common to move back and forward between different decisions; however, for returners one of the key issues is whether a particular program can satisfy a number of factors which determine the viability of a fit between the program and the individuals existing work and life. Prospective returners are only able to conceive of undertaking PGT study if key enabling factors are present, in particular the funding necessary and also a set of personal circumstances that were conducive to study. Many prospective returners are highly constrained by their existing commitments to family, home, and employment, and any PGT choices have to take these into account (Mellors-Bourne et al. 2014; Stuart et al. 2008).

Mellors-Bourne et al. (2014) draw on Hertzberg (1966) and Maslow (1954) to identify two kinds of factors that need to be in place for individuals to consider PGT study, firstly "hygienes" (referring to factors that have to be present to allow for a particular behavior to occur) and secondly "motivators" (referring to factors that make that behavior more likely when they are present). The distinction between

hygienes and motivators is useful in understanding postgraduate decision-making and fits with other research in the area such as Bennett and Turner (2012) and i-graduate (2013) who all suggest that a key area of concern for prospective postgraduates is how PGT study will fit with, and enhance, their working lives.

This need to solve the practical issues (hygienes) is likely to mean that prospective postgraduates want fairly specific information about the courses that they are considering (i-graduate 2013). Kallio (1995) suggests that the critical information for postgraduate decision-making includes the characteristics of the academic environment of the institution and its programs, the availability of financial aid, residency status, spousal considerations, the social environment of campus life, and work-related concerns. Hesketh and Knight (1999) found that postgraduates often ignored directories of graduate study opportunities and began the process of making choices with strong preconceptions about which course and institution they were likely to choose. Both Bennett and Turner (2012) and Donaldson and McNicholas (2004) also looked at the process of choosing an institution. These studies found that postgraduates typically focused on three main factors when making decisions:

- The reputation of the institution
- The availability of the subject and the institution's reputation within that subject
- The location of the institution

When asked why they were considering PGT study, both returners and continuers are likely to cite "personal interest" as a rationale (Lehman 2015; Mellors-Bourne et al. 2014). This suggests that not all postgraduates are simply pursuing career objectives; a fact highlighted by Morgan (2013a, b). However, for most this personal interest often overlapped with career motivations (Mellors-Bourne et al. 2014). Bennett and Turner's (2012) discussion of the Postgraduate Taught Experience Survey also suggests that both career development and personal interest in the subject are important and overlapping motivators for PGT study. Pires (2009) traces the interplay of intrinsic motives (e.g., the desire for new knowledge, experiences, and relationships) and extrinsic motives (e.g., the desire to increase earning power or status) among Portuguese postgraduates. In practice it is often difficult to separate individuals' personal interests from their professional ones and both are clearly at play in motivating people toward PGT study.

Other work by i-graduate (2013), Lehman (2015), and Stuart et al. (2008) also finds that career plays a central motivating factor for students to seek out postgraduate programs. The decision to invest in career development can be about increasing quality of life or status, as well as earnings, and can relate to career change as well as linear progression. Mellors-Bourne et al. (2013) found that the longer the returner had been in the labor market following their undergraduate degree, the more likely they were to be motivated to study at PGT level by a desire for "career change" rather than by a desire for career progression (Mellors-Bourne et al. 2014).

It is therefore clear that PGT decision-making is both very different from undergraduate decision-making and strongly intertwined with prospective students' career aspirations. The framework of looking at both hygienes and motivators is useful

because it helps to clarify two kinds of messages that HEPs need to signal to prospective students: (1) this program will work for you; and (2) this program will help you to move forward your career. However, highlighting the need to address hygienes also illuminates a number of issues with social equity which relate to PGT study. It is clear that not all students experience the same barriers and that both the barriers experienced and the capacity to overcome these barriers are contoured by a range of factors of disadvantage. Lindley and Machin (2013), DBIS (2016), and Wakeling (2009) argue that participation in PGT is strongly shaped by social class with financial, cultural, and institutional factors all contributing to the way in which PGT is skewed toward the more privileged.

Perhaps most obviously the cost of PGT study serves as a major constraint for many prospective students. This is particularly the case when it is added onto the debts that students have incurred in achieving their undergraduate qualifications. Purcell et al. (2012) found that levels of personal debt at the end of an undergraduate degree varied substantially by ethnicity, socioeconomic background, gender, subject of study, and age at the commencement of their course and that such demographic factors also impacted on students' likelihood of agreeing with the following statements:

I wanted to do a postgraduate course but did not want to add to my debts
I had to apply for a postgraduate course where I could live at home rather than where I would have preferred to study.

The career advantages that are afforded by PGT study are unevenly distributed. This has been picked up in numerous studies including Morgan and Direito (2015) who also found that debt and social class impacted on progression to PGT. Similarly, a study of "paired peers" attending different types of institution from contrasting socioeconomic backgrounds (Bradley et al. 2013) found that more socially disadvantaged students were less likely to progress to master's. This picture of social inequality in the composition of the PGT population is something which merits a response from institutions and from policy makers.

Implications for Higher Education Providers

Decisions about entry to PGT courses are therefore (1) integrated into the complex lives of the prospective students, (2) strongly motivated by career aspirations, and (3) influenced by a wide range of demographic features particularly related to indebtedness, access to financial capital, and social class. Each of these issues raises questions that HEPs need to consider in relation to their strategy around PGT.

With respect to the complexity of the lives of prospective students, it is important that HEPs are clear and transparent about all aspects of the student experience. The nature of the PGT cohort means that it is important for such information to include both a description of curriculum but also some clarity about how this curriculum will be realized. For example, the viability of pursuing PGT courses will vary for students depending on the day and time that teaching typically takes place. Some students

may find it easy to attend in the evening, while others may find it easier to attend classes every Monday, for example. However, if this kind of information is not known, it may convince prospective students that not all of the hygiene factors have been met. This kind of practical information about courses currently forms the basis of much of the pre-entry information provided by HEPs, but there is often room to deepen it and make it more detailed (Mellors-Bourne et al. 2014).

With respect to the career motivation of prospective students, it is important that HEPs are able to articulate what kind of return on investment postgraduate programs offer. Mellors-Bourne et al. (2016) found that in general HEPs were not able to do this. PGT students understand that they are making a considerable investment of time and money and would like as much information as possible about what they might get in exchange for this. At present many prospective PGTs are provided with relatively limited information about how postgraduate study fits into individuals' longer-term career development. One option is for HEPs to make the case that PGT qualifications confer clear labor market advantage for those who achieve them. We will investigate this claim in more depth later in this chapter. However, the prevalence of career motivation suggests that it is important for HEPs to offer as clear an articulation of the career advantages of taking the course as possible.

Provision of information about the career outcomes attached to courses is likely to need to be fairly specific to the individual. PGT study is something that individuals approach at a relatively late stage in their educational careers. By the time individuals undertake such programs, much of their capacity and capital is already established. Individuals who enter programs with strong career relevant networks and skills can be expected to have different outcomes from those who enter fresh from undergraduate degrees. Such heterogeneity reduces the value of summative statistics like the percentage of graduates in employment or the average salary. In such cases, the provision of a range of qualitative case studies of former graduates may also be useful in concert with more statistical labor market information.

Finally, institutions need to think carefully about whether they are happy to simply accept the social equity issues that attend access to postgraduate study. Institutions should at least have an idea about the demographic balance of their current PGT student cohort and consider whether this is defensible. The issue of widening participation to postgraduate study is under-theorized (Wakeling and Kyriacou 2010), but it is possible to imagine a range of interventions that might help including bursaries and other forms of cost sharing and mitigation, the provision of money and debt advice, the provision of advice and guidance about the career costs and benefits of PGT study, and the conscious targeting of nontraditional PGT students in marketing (Strike and Toyne 2015).

Career Building Through Postgraduate Taught Study

The movement from either undergraduate study or work into a postgraduate course is a career transition. Tobbell et al. (2010) highlight that this transition is little remarked upon and often assumed to be straightforward. Mellors-Bourne et al.

(2016) noted that institutional responsibility for PGT transitions is often unclear and frequently neglected. However, Tobbell et al. found that transitions were frequently complex and described the complex process of identity renegotiation that new postgraduates have to go through as they develop an idea of what being a PGT student requires.

Despite the challenges inherent in the transition to PGT, most students' experiences of their programs are generally positive (Lehman 2015). Leman makes the point that what makes the biggest difference to PGT students' positive engagement with their program of study is the quality of the teaching and learning. Students also appreciated the opportunity to develop their career skills, but this did not predict their overall satisfaction with the program as strongly as good teaching. Nonetheless it is clear that career development is both a strong motivation for participating at PGT level and something which contributes toward satisfaction with PGT programs. Given this there is a strong incentive for HEPs to ensure that programs meet students' career development needs.

However, meeting PGT students career development needs is not straightforward. Research by Bowman et al. (2005) highlights the heterogeneity of a PGT cohort, their career aspirations, and their interaction with the program. Both choice of PGT course and the experience of participating in it are influenced by dispositions and prior experiences. They identify four ways in which PGT programs interact with the career identity of the student.

- *Confirmatory and socializing transitions*: where the PGT program reinforced students' original decision and socialized them into the norms and expectations of the labor market they were targeting
- *Confirmatory transitions*: where students' attention was shared between the PGT program and other interests (e.g., work), reinforcing their identities through both
- *Contradictory/evolving transitions*: where students had experienced problems within the PGT program, giving them a sense of "not fitting in" and causing them to reconsider their career options
- *Dislocated transitions*: in which students found their course to be very stressful

This model is useful but underestimates the complexity of the way in which PGT programs interact with students' career aspirations. Merely recognizing the different perspectives that returners and continuers bring to each of these categories helps to highlight the complexity of the career identities of some of the students. For example, a student who has recently left the army and is retraining as a teacher has two career identities. Participating in a PGT course can help such a student to negotiate betweenthese different career identities. Conversely, a teacher who has left the profession to pursue a Master in Paleontology may be using the degree to offer her both a career gap and a space for exploration of her post-teaching career.

Given this it is worth considering how activities undertaken as part of PGT study might support an individual to develop their career. These can be described as intra-curricular, co-curricular, and extra-curricular activities.

Intra-curricular activities are embedded within the normal part of a student's course of study and are usually assessed. In the context of PGT, intra-curricular career support is about building a consideration of career development into the heart of the program itself. This might include involving employers in curriculum design, including assignments that build employability skills, or using the curriculum to clarify understanding of the relevant labor market. However, Skinner (2011) argues that academics are often resistant to attempts to vocationalize their programs or to introduce elements which are strongly focused on employability and career development. Addressing this is likely to require some leadership from institutions as well as changes of attitudes within academic programs. It is also worth noting that a consideration of how to embed career development at the heart of the curriculum may also lead HEPs toward the development of new types of programs that are more closely aligned to the labor market (Artess et al. 2014).

Cocurricular activities are outside of the normal curriculum and unlikely to be assessed. Although they are commonly voluntary, topics are usually linked to the subject area of a student's program. So the provision of voluntary enrichment activities such as visits, networking opportunities, and placements that allow students to explore the careers associated with their discipline are examples of cocurricular approaches.

Extracurricular activities fall outside of the normal curriculum and are not necessarily linked to a student's program. They are usually non-assessed, can be of a voluntary nature, or include paid employment. Many of the opportunities offered by institutional careers services, e.g., CV workshops and opportunities to access advice and guidance, would fall into this category. Many HEPs now signpost the career support available for PGT students, but very little information exists exploring the nature or efficacy of postgraduate career support. However, Bowman et al. (2005) found that despite the fact that many students would have benefitted from career guidance, it was unusual for the PGTs in their sample to have accessed institutional career support services.

It is also worth noting that many PGTs also continue to develop their career while working outside of the context of their program of study. For returners this might include continuing to work within their previous job or career area and perhaps undertaking some consultancy to aid with the financing of their PGT program or to keep their professional skills sharp. Other students, most usually undercapitalized continuers, may seek lower-skilled part-time work to help them to finance their studies. However, as Martin and McCabe (2007) suggest, even low-skilled work can help students to hone their employability and career management skills.

Implications for Higher Education Providers

Career development is an ongoing and active process. It is important that HEPs attend to the career development of students while they are on programs and do not simply view it as a transition issue which matters only when students are entering and leaving programs. Rather HEPs should consider how the whole student

experience supports PGT students to develop their careers. This is particularly important as engagement with career development while on program is a contributing factor to overall student satisfaction.

The framework of intra-, co-, and extracurricular activities provides a framework against which HEPs can map their provision. Artess et al. (2014) argue that a key way to approach this is through close attention to the signals that are being sent by the labor market. They argue that close engagement with employers on a number of levels including curriculum design and development, the provision of networking opportunities, and the orientation of students to focus on career outcomes are all components of successful PGT provision.

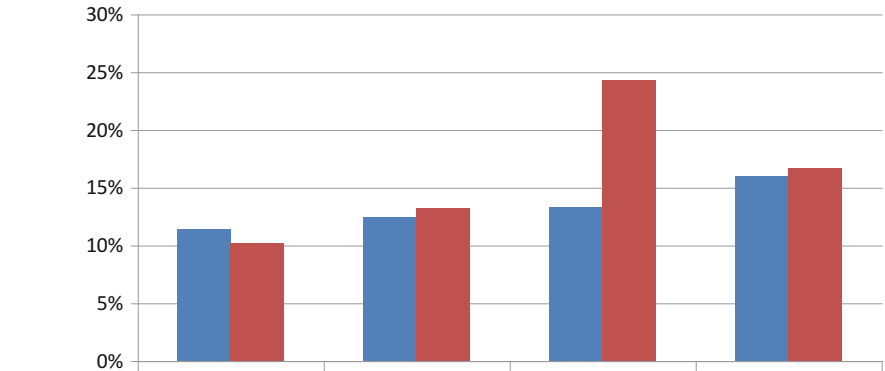
Where Does Postgraduate Taught Study Take You?

We have argued that career development considerations are central to the motivation of most individuals who are pursuing PGT study. We have also argued that HEPs need to take career development seriously, to build a marketing narrative around the capacity of PGT programs to advance individual careers and to review programs to ensure that they actually support students' career development needs.

At the heart of the focus on career development within programs is a recognition that the acquisition of qualifications alone is insufficient to develop an individual's career. Career development attends to the challenge of articulating skills and qualifications in ways that support employability.

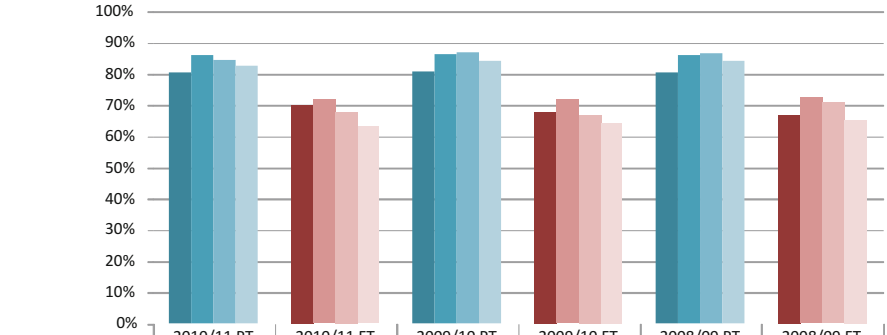
There are also other major challenges for graduates of PGT programs. The graduate labor market in the UK is largely unregulated meaning that graduates of any subject discipline can enter a wide range of occupations. Furthermore, with a few exceptions, most PGT qualifications do not confer access to new parts of the labor market which are not open to those with undergraduate degrees. Indeed in some disciplines, PGT study does not appear to confer labor market advantage over undergraduate study. Nonetheless career prospects for postgraduates are generally good as evidenced in first destinations data (HEPI and The British Library 2010; Lindley and Machin 2013; Ball 2014). However, the devil is in the detail. Artess et al. (2014) noted (Fig. 2) that the risk of unemployment on graduation from business and management degrees was higher overall for those graduating with an undergraduate degree than for those graduating with a master's, thus confirming the labor market advantage of PGT study, but among younger graduates this is reversed. This suggests that young PGT continuers might be at higher risk of not achieving a job than their more experienced peers.

Artess et al. (2014) used UK first destinations data to report on the employment outcomes of master's graduates and found that the relationship between postgraduate study and employment (and unemployment) outcomes is complex and varies by mode of study, subject discipline, and age. One interpretation of Fig. 3 is that part-time master's graduates are more likely to be in employment 6 months following graduation than those who studied full time and that full-time mature graduates may experience more difficulty finding employment. However, the underlying reasons



	21-24 FT	25-29 FT	30-39 FT	40 and over FT
Masters	11.4%	12.4%	13.3%	16.0%
First degree	10.1%	13.2%	24.3%	16.6%

Fig. 2 Incidence of unemployment among business and management graduates at 6 months following graduation by age group (Source Artess et al. 2014: 27)

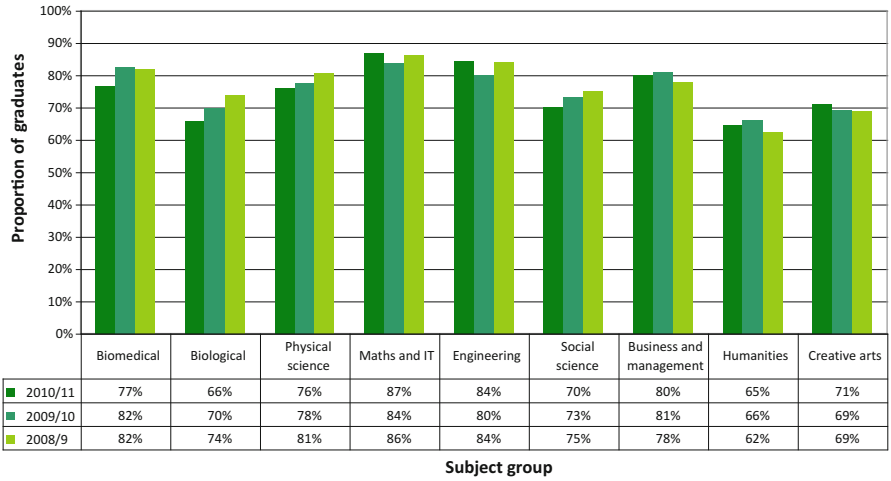


	2010/11 PT	2010/11 FT	2009/10 PT	2009/10 FT	2008/09 PT	2008/09 FT
21-24	80.5%	69.9%	80.6%	67.7%	80.4%	66.8%
25-29	86.1%	71.6%	86.3%	71.6%	86.1%	72.3%
30-39	84.4%	67.6%	86.8%	67.0%	86.5%	70.8%
40 years & over	82.4%	63.2%	84.1%	64.3%	84.0%	65.2%

Fig. 3 Employment rates for master's qualifiers, by age and mode of study in 2008/2009, 2009/2010 and 2010/2011 (Source: Artess et al. 2014: 16)

for these outcomes needs to be explored – for example, mature students may be less mobile.

There is considerable interest in not only whether postgraduates obtain employment on completion but also whether that employment is commensurate with postgraduate study. Prior to 2012 in the UK, a system of categorizing jobs into traditional (e.g., lawyers), modern (e.g., primary teacher), new (e.g., marketing manager), niche (e.g., sports managers), and nongraduate (e.g., sales assistant) was



	Biomedical	Biological	Physical science	Maths and IT	Engineering	Social science	Business and management	Humanities	Creative arts
2010/11	77%	66%	76%	87%	84%	70%	80%	65%	71%
2009/10	82%	70%	78%	84%	80%	73%	81%	66%	69%
2008/9	82%	74%	81%	86%	84%	75%	78%	62%	69%

Fig. 4 Proportion of young (aged 21–24 years) taught master's graduates obtaining professional and managerial level employment at 6 months following graduation in 2008/2009, 2009/2010 and 2010/2011 (Source: Artess et al. 2014: 20)

used to express whether the graduate had obtained a *graduate job* (Elias and Purcell 2004). More recently employment destinations data have been classified more simply into jobs that are professional/managerial or nongraduate. There is some evidence that nongraduate employment at 6 months following graduation is increasing. Figure 4 reproduced from Artess et al. (2014) shows that the likelihood of obtaining a graduate job varies by subject discipline and fluctuates slightly over time. For example, humanities postgraduates appear far less likely to achieve a graduate job within 6 months of graduating than Mathematics and Information Technology postgraduates.

There are very real challenges in classifying types of graduate employment. It could be argued that a job which is classified as professional/managerial is a graduate job. Another approach is to ask the graduates whether they needed a degree to obtain and fulfill the job role. Ball (2015) identifies that slightly fewer jobs would be classified as graduate level by graduates themselves than if a classification system is used.

A close examination of the patterns of PGT employment following graduation therefore paints an ambiguous picture. PGT students are clearly highly employable, but on the other hand, PGT degrees do not provide any guarantees. For most people in most subjects, the position of a PGT degree does not offer an automatic passport to the good life. Rather PGT is best seen as a critical career opportunity, a moment when students have the opportunity to build their social and human capital and to leverage this for career advancement. However, the process of leveraging opportunities is complex and requires a skilled approach with which PGT programs need to engage more overtly.

Implications for Higher Education Providers

In the UK there is good data on PGT student progression for the 6 months after graduation. This is a valuable resource which is not available everywhere. Nonetheless, it is important for all HEPs to consider their usage of data to understand the career destinations of their PGT students. We would suggest that HEPs attend to the following stages:

- *Reviewing* data sources to ascertain what is known about PGT graduates from the institution overall and programs in particular
- *Extending* the coverage of destinations data using both qualitative and quantitative methods to extend the coverage and depth of what is known about postgraduate career trajectories
- *Analyzing* data to consider what it reveals about the whole student cohort and key subpopulations within it particularly those related to subject disciplines and equality characteristics
- *Using* the findings of the analysis as part of the program development and quality assurance processes
- *Publishing* data and analyses to inform the career development of prospective and current PGT students

HEPs also have an important decision to make about their orientation toward former students. Career building is not something that happens overnight on the point of graduation. One option is to consider what career services and support should be offered past the point of graduation to help students to firmly transition to the labor market and maximize the value of their PGT study. Such a consideration clearly raises questions about the business model upon which such ongoing support could be based. However, it is also worth noting that alumni also represent a major resource for current students and potentially form a pool of employers and professionals who can support the career development of current students.

Conclusions

In this chapter we have argued that career development lies at the heart of PGT programs. It is essential that HEPs orientate toward the concept of career development if they are to ensure that their programs recruit, satisfy their students, and produce graduates who are capable of moving on and realizing their potential. The PGT student journey is best conceptualized as a series of transitions to, within, and beyond the program which are connected by the thread of the students' career building.

This chapter has drawn on the experience of PGT study in the UK to inform this discussion about institutional approaches to career development within PGT. However, as we have frequently noted, this area is under-researched, and there is currently very little research on PGT career development and indeed on the PGT

student experience as a whole. It is important that institutions, policy makers, and other funders recognize this evidential gap and seek to fill it.

Ultimately we believe that the opportunity to study at a postgraduate level should be a personally transformative experience. Career is the mechanism through which individuals make meaning of their life experiences and the place where they integrate learning, work, and their wider life aspirations and interests. PGT students are aware of the centrality of career to their decision to study at PGT level; it is important that HEPs acknowledge this more strongly and develop their programs accordingly.

References

Al-Fattal, A. 2010. *Understanding student choice of university and marketing strategies in Syrian private higher education*. Leeds: University of Leeds.

Artess, J., C. Ball, and P. Mok. 2008. *Higher Degrees: postgraduate study in the UK 2000/01–2005/06 Research paper 08.16*. London: Department for Industry, Universities and Skills.

Artess, J., C. Ball, F. Forbes, and T. Hughes. 2014. *Taught postgraduate employability and employer engagement: Masters with a purpose*. London: Universities UK.

Ball, C. 2014. *What do Masters Graduates do?* Graduate Market Trends, Spring 2014:12–15. Manchester: Higher Education Careers Services Unit.

Ball, C. 2015. *Employment review, what do graduates do?* Manchester: Higher Education Careers Services Unit and Association of Graduate Careers Advisory Services.

Bennett, P., and G. Turner. 2012. *PTES 2012: National findings from the postgraduate taught experience survey*. York: Higher Education Academy.

Bowman, H., P. Hodkinson, and H. Colley. 2005. *Employability and career progression for full-time UK Masters students: Final report for the Higher Education Careers Services Unit*. Manchester: Higher Education Careers Services Unit.

Bradley, H., J. Abrahams, A.-M. Bathmaker, P. Beedell, T. Hoare, N. Ingram, J. Mellor, and R. Waller. 2013. *The paired peers project year 3 report: A degree generation?* Bristol: University of Bristol, University of the West of England. http://www.bristol.ac.uk/media-library/sites/spais/migrated/documents/report.pdf. Accessed 28 May 2016.

D'Aguiar, S., and N. Harrison. 2016. Returning from earning: UK graduates returning to postgraduate study, with particular respect to STEM subjects, gender and ethnicity. *Journal of Education and Work* 29 (5): 584–613.

Department for Business, Innovation and Skills (DBIS). 2016. *Learning from Futuretrack: Deciding to undertake postgraduate study*. London: Department for Business, Innovation and Skills.

Donaldson, B., and C. McNicholas. 2004. Understanding the postgraduate education market for UK-based students: A review and empirical study. *International Journal of Nonprofit and Voluntary Sector Marketing* 9 (4): 346–360.

Elias, P., and K. Purcell. 2004. *Seven years on: Graduate careers in a changing labour market*. Manchester: Higher Education Careers Services Unit.

i-graduate. 2013. *Understanding the information needs of postgraduate taught students and how these can be met*. Bristol: Higher Education Funding Council for England.

Hertzberg, F. 1966. *Work and the nature of man*. Cleveland: World Publishing.

Hesketh, A.J., and P.T. Knight. 1999. Postgraduates' choice of programme: Helping universities to market and postgraduates to choose. *Studies in Higher Education* 24 (2): 151–163.

Higher Education Policy Institute (HEPI) and The British Library. 2010. *Postgraduate Education in the United Kingdom*. London: HEPI and The British Library.

Higher Education Statistics Agency. 2016. Statistical first release. https://hesa.ac.uk/content/view/2077/239/. Accessed 19 Jul 2016.

Kallio, R.E. 1995. Factors influencing the college choice decisions of graduate students. *Research in Higher Education* 36 (1): 109–124.
Lehman, J. 2015. *What do taught postgraduates want?* York: Higher Education Academy.
Lindley, J., and S. Machin. 2013. *The postgraduate premium: Revisiting trends in social mobility and educational inequalities in Britain and America*. London: The Sutton Trust.
Martin, E., and S. McCabe. 2007. Part-time work and postgraduate students: Developing the skills for Employment? *Journal of Hospitality, Leisure, Sport and Tourism Education* 6 (2): 29–40.
Maslow, A.H. 1954. *Motivation and personality*. New York: Harper and Row.
Mellors-Bourne, R., N. Kemp, and C. Humfrey. 2013. *The wider benefits of international higher education in the UK*, BIS Research Paper 128. London: DBIS.
Mellors-Bourne, R., T. Hooley, and J. Marriott. 2014. *Understanding how people choose to pursue taught postgraduate study*. Bristol: Higher Education Funding Council for England.
Mellors-Bourne, R., A. Mountford-Zimbars, P. Wakling, J. Rattray, and R. Land. 2016. *Postgraduate transitions: Exploring disciplinary practice*. York: Higher Education Academy.
Morgan, M. 2013a. *Understanding prior feedback experiences of new postgraduate taught (PGT) STEM students' and their expectations and attitudes towards PGT level study at a 1992 Institution*. York: Higher Education Academy.
Morgan, M. 2013b. Setting the scene. In *Supporting student diversity in higher education: A practical guide*, ed. M. Morgan. London: Kingston University and HEFCE.
Morgan, M., and I. Direito. 2015. *Widening and sustaining postgraduate taught (PGT) STEM study in the UK: A collaborative project*. London: Kingston University and HEFCE.
Padlee, S.F., A.R. Kamaruddin, and R. Baharun. 2010. International students' choice behaviour for higher education at Malaysian private universities. *International Journal of Marketing Studies*. 2 (2): 202–211.
Pires, A.L.O. 2009. Higher education and adult motivation towards lifelong learning. An empirical analysis of university post-graduates perspectives. *European Journal of Vocational Training* 46 (1): 129–150.
Pring, R. 1995. *Closing the gap: Liberal education and vocational preparation*. London: Hodder and Stoughton.
Purcell, K., P. Elias, G. Atfield, H. Behle, R. Ellison, D. Luchinsaya, J. Snape, L. Conaghan, and C. Tzanakou. 2012. *Futuretrack stage 4: Transitions into employment, further study and other outcomes*. Manchester: Higher Education Careers Services Unit.
Quality Assurance Agency. 2008. *Bologna process in higher education: Compatibility of the framework for higher education qualifications in England, Wales and Northern Ireland with the framework for qualifications of the European higher education area*. Gloucester: Quality Assurance Agency. http://www.qaa.ac.uk/en/Publications/Documents/Bologna-Process-in-HE.pdf. Accessed 26 May 2016.
Skinner, H. 2011. Fostering employability skills in postgraduate students practice and research. *Graduate Market Trends*, winter, 15–18.
Strike, T., and J. Toyne. 2015. *Widening access to postgraduate study and fair access to the professions*. Sheffield: University of Sheffield.
Stuart, M., C. Lido, M. Morgan, L. Solomon, and K. Akroyd. 2008. *Widening participation to postgraduate study: Decisions, deterrents and creating success*. York: Higher Education Academy.
Tobbell, J., V. O'Donnell, and M. Zammit. 2010. Exploring transition to postgraduate study: Shifting identities in interaction with communities, practice and participation. *British Educational Research Journal* 36 (2): 261–278.
Wakeling, P. 2009. Social class and access to postgraduate education in the UK: A sociological analysis. PhD Thesis, submitted to the University of Manchester.
Wakeling, P., and C. Kyriacou. 2010. *Widening participation from undergraduate to postgraduate research degrees*. York: Department of Educational Studies, University of York.

Preparing Postgraduate Researchers for Life beyond the Degree

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Pam Denicolo

Contents

Abstract

Until two decades ago in postgraduate education there was an almost exclusive emphasis within universities worldwide, unfettered by external intervention, on the quality of the research undertaken and its presentation in a thesis or dissertation and in published work. However, the 1990s witnessed an unprecedented rise in concern from associated organizations about the preparedness of postgraduate researchers for work in other institutions within or outside the Higher Education (HE) sector. In particular the transferability of learning and expertise between the academy and professional work has risen in importance as doctoral graduates increase in number, diversity, and career aspirations. Further, the "fitness for purpose" of doctoral education for subsequent work, even for an academic career, and as a contribution to national economies has been questioned, while governments and other funders have increased their influence on the structure and content of research training in the HE sector.

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HE institutions globally have developed various forms of "generic" skills training (skills in addition to those required for the immediate project) and engaged with employers to bridge theory-practice gaps, nurturing collaborative projects of varying kinds. The desire that doctoral researchers produce research that has influence beyond a contribution to knowledge has been extended to a more formal requirement for them to demonstrate "employability skills." Responding to such challenges to traditional postgraduate education and conventional academic practice, many UK universities are in the vanguard of initiatives such as the Skills Agenda and the Public Engagement/Impact Agendas thus providing examples which illustrate the impact on HE staff and students for institutions worldwide. Nevertheless, those working within particular units of institutions are varyingly aware of the strength and pervasiveness of these changes.

Keywords
Doctoral education · Discourse and practice · Employability skills · Researcher developer · Research impact · Public engagement · Collaboration · Codes of practice · Researcher development framework (RDF)

Introduction

Since the millennium, global and national economic pressures (directly or indirectly economic in origin) have led to rapid and unprecedented transformation in the policy, procedures, and purposes of postgraduate education, particularly in relation to doctoral research. During most of the preceding century, when the vast majority of current universities were established, individual institutions devised their own doctoral procedures, guided by disciplinary traditions and monitored or moderated by external examining procedures. Intervention by other external agencies was deemed inappropriate so that even government reviews of postgraduate research provision were infrequent and usually little stronger than advisory in nature. Only as that century drew to a close, did the voices of research funders and employers external to academia raise and coalesce, from differing perspectives, to challenge the status quo.

Although there existed, and still does, both disciplinary and national differences in the detailed content and structure of the doctoral thesis (or dissertation) and how it is examined (in short, whether or not a viva voce, private, or public is involved), one procedure was common to all: the supervisor (or adviser) was nominated as the prime support to doctoral candidates, providing the majority of any guidance available to them. Candidates and supervisors shared a goal of producing a written body of work which demonstrated the development and completion of a research project that produced an original contribution to knowledge and sufficient content to lead to peer-reviewed publication. This is now sometimes referred to as Mode 1 knowledge production (Gibbons et al. 1994) in which research is instigated by a scientist within a discipline interested in engaging in fundamental research. (Mode 2, socially distributed knowledge, will be referred to in the section on Further and Continuing

Ramifications). Doctoral training reflected the pervasive metaphor of the times, doctoral student as apprentice. This apprenticeship was based on a premise that the successful candidate would continue to generate knowledge as a master craftsperson, most often as a lecturer in a university. Challenges to those expectations emerged in response to many social factors towards the end of the twentieth century.

Economic imperatives within societies and competition between them became mirrored in the Higher Education (HE) sector so that the monitoring of the nature and value of research and how it is managed came to dominate both discourse and practice (Deem and Brehony 2005). Postgraduate researchers were not exempt from these developments. For instance in the UK, government, previously focused on undergraduate education, had left the education and training of postgraduates to university and college managers who devised policy while they in turn then delegated its implementation to supervisors. By 1987, however, stirrings of concern about submission rates in the social sciences for doctorates stimulated the Winfield Inquiry. Then, in 1996, in response to burgeoning numbers of postgraduates overall, the most comprehensive review of postgraduate education in general was conducted (Harris 1996) producing recommendations and conclusion about standards and funding not just for England but for the whole of the UK so that the high reputation of UK graduate education be maintained. This review also included the first official recognition of the value of graduate education being not simply for individual development and knowledge advancement but also for wealth creation. A new era for postgraduate education, particularly doctoral education, emerged.

Drivers of Change

By the late 1990s, the so-called massification of HE was well underway in many countries. For instance, the number of doctorates awarded across the countries of the Organization for Economic Cooperation and Development (OECD) rose from 158,000 in 2000 to 247,000 in 2012 (OECD 2014), while from 2004–2005 to 2013–2014, the number of postgraduate researchers registered in the UK rose by 27% (UUK 2015). The Bologna Process provided both stimulus and opportunity for change on a grand scale and has been hailed as transformational and revolutionary as HE underwent a metamorphosis across Europe and beyond (Park 2007; Denicolo 2010). The original intention to develop harmonized programs and degrees across the expanding number of countries of the European Higher Education Area (EHEA) to produce transparent equivalence, comparability, compatibility, and coherence became increasingly orientated towards developing and maintaining a competitive advantage in the world economy. Other countries outside the EHEA pursued the same goals: following suit by developing their research and enterprise provision, mainly focusing on the doctorate as a training vehicle for researchers.

A plethora of government and funding body initiatives and edicts impinging on higher degrees by research in the UK and wider afield led to questions about the nature of the illusive concept of doctorateness (Denicolo and Park 2013). Whether the doctorate could maintain and retain its identity was debated, whatever its essence was deemed to be

by different stakeholders given the onslaught of challenges and elaborations. The purpose of the doctorate, originally to generate new knowledge and prepare candidates for working largely in universities or at least in the education sector as a whole, became supplemented by requirements to prepare candidates for a wider range of employment.

Towards the end of the first decade of the twenty-first century, the global economy was in crisis, with unemployment or at least scarcity of jobs, within and outwith higher education, leading to "qualification inflation" with many more mature people enrolling for higher degrees to maintain their competitive edge. The doctorate has become the sought-after qualification for a range of professions, therefore higher education institutions (HEIs) have responded by creating doctoral programs tailored to meet the needs of this wider and more diverse population for skills transferable to an extended range of employment. In parallel other factors, such as the growing need for inter- and multi-disciplinary research to solve ever more complex problems, led to similar responsive provision of variously named specialized doctorates (for example: EdDs for Education, EngDs for engineering).

In the UK, the Roberts Report *SET for Success* 2002, with the subsequent 10 years of funding for the development of employability skills (originally known as generic and transferable skills), contributed to this transformation of doctoral education. Whereas the 1996 Harris report had emphasized the need for institutions, particularly those in receipt of public funding for research, to provide research methods training, this initiative augmented training requirements to include the development of skills that, while contributing to improvements in the quality and timeliness of completion of the doctoral project, would be attractive to a range of employers. Meanwhile in Europe the European Universities Association (EUA) had been established to enhance networking between, and influence policy within, institutions. Institutions began to cope with the oxymoronic demands of becoming collaborative while remaining autonomous and competitive.

In the EUA report 2007, the UK's place in the vanguard of the sector's response to these widespread challenges was acknowledged as it highlighted the increasing global trend towards the provision of more structured programs to respond effectively to the demands of the labor market. Thus in the following year, the EUA Council for Doctoral Education (EUA-CDE) was established to, amongst other things, promote cooperation and exchange of good practice and to improve the mobility of researchers. Comparable challenges and responses had pervaded higher education in Australia (see, for example, Gilbert 2004) and the USA (for example, as described in Golde and Walker 2006). By 2007, a meeting in Canada of representatives of graduate education from Australia, Canada, China, Europe, and the USA, after intensive discussion of best practice, produced the Banff Principles on Graduate Education (www.cgsnet.org/ckfinder/userfiles/files/mtg_BanffPrinciples.pdf). The Salzburg Principles for Innovative Doctoral Training were established in 2005 (http://www.eua.be/eua/jsp/en/upload/Salzburg_Report_final.1129817011146.pdf),then revised and adopted by the European Research Area in 2011 (http://ec.europa.eu/euraxess/pdf/research_policies/Report_of_Mapping_Exercise_on_Doctoral_Trai ning_FINAL.pdf). Of particular relevance here is that, although the original first principle recognized that a core component of doctoral training is the advancement of knowledge through original research, this was firmly linked to an increasing need to meet the requirements of an employment

market wider than academia. Whether these two aims are compatible is a moot point. However, its mapping exercise demonstrated that exposure to industry and other relevant employment sectors was generally considered difficult to implement. Simultaneously, a position and then an advice paper on good practice in doctoral training was produced by the League of European Research Universities (2010 and 2014 respectively) demonstrating an unrelenting, sustained pressure on doctoral education policy and practice that impacted on the structures and economies of institutions as well as on the staff who work in them (Denicolo 2016).

Economic and Efficiency Impacts

The model of individual training of researchers in skills, research, and generic, by their supervisors was clearly inefficient and would have been an unconscionable burden on academic staff taking on the role of supervisor, even if they themselves possessed the skills and experience to provide the full breadth of training required. By the turn of the century, most departments/schools pooled resources (academic expertise) to provide internal training programs focused on broadening the research skill-base of their doctoral students. Further, in some cases, faculty-wide provision of "methods" training and workshops on thesis writing, literature access, and reviewing and preparation for examination became common, drawing on the range of skills provided by interested academics and available from other colleagues such as library staff. In the UK, following the Roberts review (2002) of doctoral education which added employability skills to the curriculum, graduate schools gradually became the standard way of providing a range of support including training for doctoral candidates (Denicolo et al. 2010). These graduate schools took many forms, from discipline specific through faculty to Institution-wide variants, from virtual to building-based, and included different selections from a range of possible provisions (from delivery of training only to the provision of all services and support except for project supervision) for all postgraduates or only for postgraduate researchers.

The concept of graduate school emerged in North America during the 1960s and continues to influence graduate practice there and, indeed, worldwide although they are relatively recent structures in much of mainland Europe (named variously doctoral or research schools or colleges). Few versions in the UK and Europe have included such an extensive taught provision as is common in the USA and Canada but they seek to emulate the stimulating research environment and culture provided by a critical mass of researchers and opportunities for cross-disciplinary cooperation engendered therein. Denicolo et al. (op cit) found that the most common aims of UK graduate schools, despite their diversity, was to use resources efficiently to improve: the quality of graduate education, the student experience, research progression, and completion rates.

The most common area for cooperation within institutions remains the development of employability skills, with pump-priming money being provided for 10 years in the UK (the so-called Roberts Funding) in order to establish continuing, institution-funded good practice in the provision of such training. There has been considerable debate about who should or could contribute that training as academics came under increasing pressure to win funding and raise their publication rates and from this tumult the new role of researcher developer emerged. Such people, usually academic-related

staff, can now be found in universities across the UK, each charged in some way to organize employability training across a broad spectrum, contributing workshops themselves, and/or recruiting others to provide their expertise. Coalescing what has been termed "generic skills training" into units larger than departments, supported by researcher developers, has been deemed more efficient financially and has had further benefits, though it has not been without challenges and turbulence as will be revealed in the next section on continuing ramifications.

Institutions in general, and researcher developers, in particular, have been supported in their efforts by Vitae (https://www.vitae.ac.uk), which is an organization now sustained by the membership fees of institutions worldwide but originally funded by the UK Research Councils to drive the development of highly skilled, innovative researchers; champion their needs; and demonstrate their impact on economies and society. Vitae's current work has a particular focus on developing the careers of researchers, from doctoral researchers through all research roles but particularly focused on early career or postdoctoral researchers, and supporting the work of researcher developers. Of particular significance is Vitae's Researcher Development Framework (RDF), a tool which maps the range of skills/attributes required of researchers over their whole careers, demonstrating how these attributes can be identified and progressed through a career plan. (The three attributes of successful researchers most commonly cited by experienced researchers in the research that underpinned the RDF were passion, perseverance, and stamina – clearly these are particularly useful attributes in these transformative times in higher education as well as for staff in services, commerce, and industry in stringent economic contexts.)

The Vitae/RCUK Impact and Evaluation Group was originally established to assess the outcomes of all the initiatives stimulated by the Roberts Funding, hampered though the task was by the lack of base-line data describing the situation pre-2002. The Group did though, devise an Impact Framework which supports the building of evidence bases for the influence of researcher development and continues to be used to inform national and agencies' policies and practices, important in a climate in which value for public money must be demonstrated.

Further and Continuing General Ramifications

As this century entered its second decade, funding from disciplinary research councils in the UK, as elsewhere, became ever more tightly squeezed by government with a further requirement for institutions to find more economic ways of training researchers to fit a wider employment market. At the same time, those funders were incorporating for all researchers, including doctoral candidates, two new obligations: demonstration of the potential and likely impact of their research products, not just for knowledge expansion but for society and the economy, and involvement in public engagement. The UK National Coordinating Centre for Public Engagement suggest that public engagement is a term used to cover the many ways in which the public shares in the activities and benefits of higher education through interaction and listening to each other for mutual benefit. The notion of Ivory Towers had been relegated to mythology and new policies and modes of working began to emerge to

ensure the relevance of research not just to knowledge producers but to society at large. That is, it is intended now to produce more socially distributed knowledge, multi-disciplinary and application-oriented or, as some name it, "mode 2 knowledge" to distinguish it from the "mode 1" variant that was believed to be a product of a hegemony of autonomous, experimental researchers (for a discussion see Nowotny et al. 2003). Even those institutions that had already embedded generic skills training within doctoral/graduate schools and colleges found these new requirements difficult to incorporate with their limited human resources and decreasing funding. Thus, spurred on by funding bodies, collaboration between institutions, generally termed "doctoral training partnerships," began to become pervasive. Currently such partnerships tend to cover broad disciplinary areas (for instance, social sciences or engineering) within a number of universities who share resources and expertise to support the needs of doctoral researchers in order to combat the inefficiencies of smaller units.

Collaboration is not now restricted to the higher education sector as doctoral education providers begin to build stronger bridges with nonacademic partners to provide researchers with personal access to different work cultures through a range of activities such as visits, collaborative research projects and supervision, placements, and internships (see the EUA 2015 report on DOC-CAREERS II Project: Collaborative Doctoral Education in Europe: Research Partnerships and Employability for Researchers: http://www.eua.be/activities-services/publications.aspx). Further, the EUA 2016 note that, as research is increasingly global, institutions have become more internationally focused while doctoral candidates, recruited worldwide, become "the glue in global collaborations." In their subsequent careers, as the workforce becomes increasingly mobile, they work and network with other partners in widely-spread geographical locations and diverse occupations. Archer (2016) noted the importance of these influential alumni in his report for the UK International Unit, basing his opinions on the results of the 2015/16 International Student Barometer (http://www.i-graduate.org/services/international-student-barometer/). The latter indicates that students' priorities change from preregistration concerns about research quality and institution reputation to an appreciation, as they progress through their programs, of learning and support factors and careers advice, work experience, and employability potential.

Impact on Supervisors

It would be remiss to neglect, within this panoply of initiatives, the role of the supervisors who have to cope with changing requirements of doctoral support, not all of them finding the adjustments readily or happily accomplished. When the apprenticeship model of supervision became ubiquitously recognized as no longer viable, supervisors were expected to:

- Adapt to working in supervisory teams
- Engage in more frequent and demanding assessment of their doctoral candidate's research progress and development of generic, transferable skills
- Contribute to large group teaching of research skills rather than "on-the-job-training" of individual students

- Broaden their own understanding of research approaches and methods
- Share their students' time with other trainers
- Support their students in finding and benefitting from opportunities such as employer and public engagement (Denicolo 2007)

Further, supervisors themselves continue to face pressures within their organizations, transmitted from external funders, to ensure that their doctoral candidates successfully submit their theses on time whilst, simultaneously, those very funders also expect these academics to encourage students to participate in an expanding range development activities. Revised Codes of Practice for the support of doctoral researchers proliferate, with additional requirements or changes in policy being added annually, and are distributed to already busy academics to enact.

Most universities now provide some training for supervisors, albeit usually for new or newer recruits to the academy, and/or provide a more experienced mentor within the supervisory team, while a few also provide workshops on examining. Although some institutions offer academics what equates to Continuing Professional Development in the form of workshops and/or seminars for more experienced supervisors, these have a tendency to attract enthusiasts rather those who really could benefit from updating. A very few institutions indeed insist on attendance at a relevant workshop to gain a License to Practise as a supervisor or as an examiner, internal or external, before letting staff loose on live students. Nevertheless it is unsurprising that many supervisors, though they continue to play a critical role in doctoral education, find it difficult to keep up with changes and sometimes yearn for "an imagined golden past" when their guidance role and authority were clearly bounded and the students' task was simply to produce a seminal thesis (Halse and Malfroy 2010). In contrast, what counts as a seminal thesis has always been ill-defined with criteria unstandardized between disciplines or institutions (Tinkler and Jackson 2004). While recognizing that each doctorate is intended to provide a unique contribution to knowledge, it seems odd that our most prestigious degree is so nebulously defined given that for all undergraduate and masters level degrees there are very clear learning objectives and marking criteria to assure quality, consistency, reliability, and equivalence. This is especially challenging given the current, seemingly universal, expectation that ailing national economies will be shored up by the products of the "knowledge economy" (Clarke 2001) contributed to by those with newer forms of the doctorate.

Research Evidence of Impact on Researcher Development

Unfortunately, there is as yet little evidence about the long-term outcomes of such initiatives as the:

- Training of researchers in generic, transferable skills in order to enhance their career prospects and their more immediate contributions to the world of work
- Impact Agenda which requires researchers to consider at the outset the potential research outputs and how these might contribute to outcomes of value to theory, the economy, and society in general

- Public Engagement Agenda which seeks to explain, interest and involve the wider society, including employers, in research at its various stages from conception to implementation

Earlier it was noted that the UK Impact and Evaluation Group had difficulty in judging the success of the pump-priming Roberts' Funding for researcher skill development since there was no base-line data and the same follows for the other initiatives; their influence on subsequent careers would require a longitudinal study across very large and diverse cohorts. In the UK, the Destination of Leavers from HE (DLHE) survey tracks UK and EU domiciled graduates' employment six months, one year, and three and a half years after graduation, so there is information on what kind of employment they take up but this survey does not provide specific evidence about the influence of those initiatives listed above. There is, though, a growing body of international literature that has explored doctoral student's perception of their skills development within their doctoral programs, finding still that key employability-related skills are particularly lacking. Prada and Peacock (2015) used large-scale European survey data, specifically highlighting a need for increased careers advice and support within doctoral programs across nations. Within the context of the USA, Rudd and Nerad (2014) and, in the Australian context, Jackson and Michelson (2015) identified the need for broader employability skills and careers support within doctoral programs. To further demonstrate the international nature of this problem, Tu et al. (2015) explored Chinese students' perceptions and found a need for greater innovation training to support doctoral graduates' employability across sectors, proposing universities-industry-government collaboration to address these issues.

One challenge to the development of employability skills is the degree to which doctoral researchers understand employer expectations and choose to engage with this type of skills development. De Grande et al. (2014) provided evidence from Belgium that doctoral researchers undervalue certain skills compared to employers. Furthermore, British, but not Chinese, PhD students showed a negative association with entrepreneurial and commercial skills, which could potentially inhibit involvement in training (Walsh et al. 2014), while Manathunga et al. (2009) found that PhD graduates in Australia reported employability skills deficits even when they had completed doctoral programs tailored to produce "industry-ready" graduates. These studies highlight the need for doctoral programs to help researchers learn to translate their transferable skills into new contexts, something that can be better achieved by experience of those contexts.

In the next section, a summary of a response by a group of UK universities to these issues is briefly described to illustrate how some of these challenges are being met, although scrutiny of the actual process also highlights variability across and within institutions in engaging with external demands and internal initiatives.

Ramifications for Practice: A UK-Based Case Study

As has been described so far, since the Bologna Agreement (1999), a plethora of policy documents have emerged in the UK and Europe that impinge on the practice of Higher Education (HE), many demonstrating an unprecedented interest in the

development of the skills of graduates at all levels, primarily in skills required for future employment (Jorgensen 2014). Further, UK government reports, by Leitch (2006) seeking a raising of all levels of skills and by Hodge (2010) reviewing the implementation of skills training, provided acknowledgement of progress but noted that the needs of employers were still being neglected. In both these documents, emphasis was placed on development and expansion in the STEM subjects.

Contemporaneously, however, HE institutions in the UK struggled to recruit students into some of the sciences; in particular enrolment in Physics degrees was declining, despite an overall growth in numbers of undergraduates and postgraduates. The reveilles came when the Physics department at a research intensive university (Reading) was forced to close because of low undergraduate recruitment, causing consternation across the discipline as other institutions verged on a similar state. The response in the South East of England was that six Physics departments across the region sought and won funding from the Higher Education Funding Council for England (HEFCE) to support collective action in the form a network. Thus the first phase of the South East Physics Network (SEPnet) was established in 2008, charged with improving the attractiveness of the discipline at all levels through focusing on outreach, impact, and employability while maintaining/ enhancing teaching through research.

Responding to two specific pressures (national/international policy and internal recruitment issues), skills training, and more specifically meeting the skills needs of employers, became one strategic focus of the network which has now expanded to 10 institutions. In summary, the employer engagement strategy aims to:

- Increase awareness of the links between universities and business
- Survey and assess current and future requirements of employers, including SMEs (Small and medium size enterprises)
- Produce qualified, employable graduates at all levels with the skills and knowledge to meet the needs of industry and commerce

In reviewing the literature on university-industry relations, Perkmann et al. (2013) coined the term "academic engagement" to denote knowledge-related collaboration between academic researchers and nonacademic organizations, including collaborative research and consulting as well as exchange of advice and networking activities, formal and informal. Thus academic/employer engagement is a more appropriate term for the SEPnet context than what is normally described as "knowledge transfer" in that, in this case, the transfer conduit is two-way with any commercial aspect being subservient to establishing through various means a culture of mutual understanding and support. Relevant SEPnet activities for both undergraduate students and doctoral researchers (through a graduate network – GRADnet – established in 2013, with a second round of funding) include placements and internships of various kinds, employer mentoring of students, workshops and training provided by employers and/or taking place in employers' premises, and site visits. In addition, for doctoral researchers, there is research co-supervision and collaborative projects, specific problem-solving challenges for them to work on for

the employers during residential Summer/Winter Schools. An Advisory Panel of employers guides the skills training provided. Care has been taken to ensure that the topics covered in sessions are either ones not previously provided in the individual institutions or are extensions of those already generally provided, tailored to the specific needs of physicists. Amongst other things intended to be of mutual benefit to the participating universities and employers are the sharing across the sectors of knowledge, expertise, creativity, skills, and access to specialist kit.

As noted by Marcketti and Karpova (2014), while students can be better prepared for future careers by learning through industrial collaborations, they nevertheless face challenges in the process, not the least confronting the differences in language and culture between the academy and the world of work while managing the time and energy demands of fulfilling both their academic and skills-learning commitments. Similarly, academic colleagues have been confronted with a need to share both their hard-won industrial networks and their doctoral researchers while learning further to work with those in cultures with different aims and objectives. This is in addition to working in collaboration across the sector with colleagues with whom, in other respects, they are in competition for students and funding. At the same time, the staff involved with GRADnet are encouraged to contribute to the small but growing literature (see for example de Freitas et al. 2014; Lucia et al. 2012) on models of industrial-academic collaboration, although such publications are beyond their normal disciplinary boundaries and so are additional to those they must produce to maintain an academic research profile. Meanwhile, employers, too, in the hope of gaining future employees more suited to their needs are enjoined to work with erstwhile business competitors during workshops and residential programs while encountering the somewhat arcane practices of academia. Progress over the first 3 years of GRADnet was generally good though inevitably erratic and patchy in some respects, requiring patience and diplomacy from all concerned.

The perspectives of all the participants in the enterprise must be regularly monitored:

- As part of practice evaluation to aid appropriate further development
- To contribute to reports to the immediate funders, that is HEFCE and the institutions' executives
- To share with the wider communities that both support and benefit from HE activities – impact reports of variable kinds
- To inform other similar communities who may benefit their own practice by learning of the triumphs and tribulations of struggling others.

Some of this information has been shared with colleagues at national and international conferences (Denicolo and Duke 2015, Duke and Denicolo 2016; Duke et al. 2015). These presentations recognized the wide degree of variation in engagement of both supervisors and doctoral researchers, acknowledging that the latter were often but not always influenced by the views of the former. While more than a handful of supervisors from the network universities demonstrated lack of interest in or claimed no knowledge about the GRADnet provision, or indeed about

the Skills Agenda itself, few actively discouraged researcher attendance at GRADnet activities although they might well emphasize to their charges the "potential distraction" from the main focus of completing the project, preferably with several journal articles submitted along the way. The majority of the remaining supervisors in the network provided various levels of encouragement to their supervisees to attend these activities but tended to be passive in their own level of engagement, only a minority offering to contribute to or run workshops. [These stances have been echoed by colleagues from other institutions and research partnerships through presentations at UKCGE, Vitae, and other conferences since the inception of the Skills Agenda and can be found described in several of the international journal articles and position papers cited here. In some forums it seems as if supervisors are blamed for all the ills besetting these complex and evolving systems.] Fortunately the small proportion of supervisors who recognize added value in the work of the consortium, and also contribute to it, is growing as researchers who attend sessions return to their labs with enthusiastic reports and demonstrate new skills.

Feedback from workshops and residential schools indicates that doctoral researchers particularly appreciate interactive, face to face workshops, rather than large group presentations or substantial e-learning packages. They report very much enjoying and benefitting from meeting and working with other students from their own physics subdiscipline based in other institutions as well as those from other subdisciplines generally. Some are obviously more outgoing than others, but many have taken opportunities to present their work to various public groups or to promote study of physics in schools, especially raising the profile of physics with young female pupils. Each year a few enthusiasts respond to a call to produce short teaching packages, in various formats, on topics they conquered but initially found difficult or wished they had known more about as new students. These have been added to the resources available across the universities and some have had nearly 500 "hits" a year. Meeting and talking with employers has been a highlight for this group of researchers while they appear to have surprised themselves by how well they have been able to bring their critical thinking and analysis skills to bear on real-world problems provided by employers. Over the 3 years of GRADnet's existence, the number of new degree registrants who aspire to an academic career seems to be diminishing and this decline accelerates as their course progresses, infrequently because of disillusionment with their physics research but often because they are introduced to a wider variety of potential and interesting careers. A similar pattern has been found for biomedical doctoral researchers at the University of California (Fuhrmann et al. 2011). It would be useful to find out if this is repeated in other disciplines, in other countries, with what support from employers.

If "repeat business" is an indication of successful engagement, then the employers who have joined and contributed to SEP/GRADnet represent its greatest triumph to date. Currently over 200 employers have joined the network from very large multinational companies to SMEs, each contributing expertise in a variety of tangible ways while several are regular attendees at events throughout the academic year. There is now much interaction between doctoral researchers and employers, with several of the former receiving job offers or suggestions to get in touch about

employment for when they finish their studies. There is also a small but growing engagement, for consultancy in each direction, between university staff and employers.

The staff team of GRADnet, which includes a contribution from the SEPnet Employer Engagement, Public Engagement, Diversity, and Impact representatives as well as staff who direct, co-ordinate, and present workshops and other activities mirror those contradictory responses. They find that the effort of trying to enthuse academic colleagues often seems an uphill struggle. In a recent survey one of the team expressed a common view thus: *It is just like the National Health Service or the European Union – everyone wants the benefits but they do not want to incur the obligations necessary to gain them*. Yet they experience the activities with doctoral researchers and employers as stimulating and fulfilling.

Summary with Caveats, Opportunities, and Recommendations

It is now almost 20 years since serious consideration emerged globally about the development of skills for employment by postgraduate researchers. Prior to that it was assumed that the gaining of a doctorate was sufficient evidence in itself of the kind of intellectual capacity its holders needed for the jobs they might aspire to, these mainly being in education, predominantly higher education. As jobs in all sectors, including higher education, became increasingly scarce not only more but a wider variety of people registered for higher degrees by research, mainly to improve their employment opportunities or to gain promotion. Over the same period, funders of research, mainly those holding the public purse, became less generous and more concerned about the value for money provided by doctoral education so that universities, previously in almost sole charge of this provision, became pressurized to be both more accountable and responsive to employers' needs. Funding became increasingly circumscribed by requirements to demonstrate the value of research to the wider society and to provide employers with candidates with "employability skills" that could serve a range of working environments.

While greater support of and training for doctoral researchers, and thence for their supervisors, has been welcomed by enthusiasts, there has yet to be universal approbation and application of employability training initiatives which would amount to, what some would label, a paradigm shift. Deem and Brehony (2005), although inspired and inspiring contributors to the development of doctoral researchers, regretted that universities, not previously dominated by management, seem to have subscribed to joining an audit society. Later, Winter (2009) indicated the increasing degree of incongruence between the ideologies and values of academics and university corporate values and goals, leading to schisms in academic identity. Billot's (2010) research examined how changing academic practices required individuals to encompass multiple roles, generating tensions of identity for staff. Such challenges to identity may well account for the reluctance of supervisors to engage with all of the agendas now impinging on doctoral education because they perceive their previous hard-won expertise as being degraded, in a

sense de-skilling them just as other people try to up-skill their supervisees. These others apparently "muscle in" to what was previously the supervisors' prime territory. In the literature exemplified in this chapter, few, if any, of the supervisors castigated for lack of engagement with recent innovations to practice do so out of malice or indolence. More likely they fail to do so out of fatigue, if not despair, or because of a limited, ill-informed vision about what counts as a successful post-doctoral career, anything other than an academic career representing failure. (Yet, given the vast changes occurring across all of academia, we might speculate whether the doctorate in its former, traditional form would adequately prepare them for the challenges inherent in a modern academic career.)

Attempts to highlight the prospect of their protégées being seduced away to other employments, alongside extolling economies of scale produced by sharing student support, are poor weapons in the battle to win their hearts and minds. Indeed, while logical, economic arguments may have an intellectual influence, reluctance to change previously successful ways of being and doing is hard to discourage, particularly since research supervision generally attracts little overt, tangible reward. In the past, academics undertook supervision for its intrinsic reward, a love of exploring the unknown with carefully chosen others, so was a matter of the heart not the head. Nowadays many experienced supervisors view it, somewhat erroneously, as a relatively stable aspect within a revolving kaleidoscope of changes and demands in all of their professional roles. Changes to the status quo are rife in undergraduate teaching and course and/or department management; outreach, knowledge transfer, and diversity issues present challenges; and the funding, development, and publication of their own research is an ever-present test of stamina. Relatively new supervisors can sometimes be more strategic, taking on only those students who have the potential to contribute to their own publication profile but who are already fairly autonomous thus requiring little other attention.

Greater explicit respect for the core role of supervision with practical acknowledgement, in the form of time accounted for and value recognized for promotion, might make them all more appreciative of the need for flexibility, change, and development. Further, academics are more easily led than driven or herded so their expertise in research supervision should be recognized by including their views in the development and transformation of doctoral training and support rather than having poorly informed government or management perspectives imposed upon them.

Supervisors influence on the attitudes of their supervisees to engagement with the agendas is manifest. Nevertheless those doctoral researchers who do take up some skill development opportunities, perhaps because introductory sessions are mandatory, and find them stimulating and supportive, are more likely to continue to welcome invitations to well-publicized events, the purposes and benefits of which are clearly explained (See http://thesiswhisperer.com/2016/05/11/how-long-does-it-take-to-do-a-phd/). Similarly, since they tend to come to doctoral study with restricted knowledge about its pressures but great expectations, appropriate prior information might prove helpful about what to expect about its progress and how they might manage the range of demands on their time. It would be appropriate to

prime them in advance with regard to realistic expectations about the academic job market and the vast array of opportunities for those with doctoral-level skills in the social services, commerce, and industry. They also appreciate, as their course progresses, indicators (course attendance transcripts, certificates, or diplomas) of their successful completion of additional training, beyond that required for simply completing their research and thesis, since these enhance their curricula vitae. As demonstrated above, opportunities to work with a wide range of employers in a variety of ways can be significant motivation to enhance their skills beyond the requirements of their immediate project.

At the beginning of this academic metamorphosis, employers beyond academia were clearly seen as "other" by academics and by themselves – each expecting the other group to misunderstand or lack sympathy with their needs or make little effort to meet them. However, as barriers are slowly broken down, conversations enjoined and joint projects pursued; there is emerging a greater appreciation of the cross-sector commonalities and respect for differences. As more institutions and organizations, in whichever sector, open their doors (and minds), collaboration can be nurtured to mutual satisfaction as demonstrated in the preceding case study. External employers, when welcomed and given opportunities to work with universities, discover that academics are not as esoteric as they expected, and that successful doctoral candidates have more to offer than high intellectual capacity. In parallel, higher education professionals gain appreciation of the diversity of employment roles in which research skills can make a comparable significant contribution as they do in academic research. They also develop wider networks for enterprise initiatives, collaborative research, and opportunities to develop evidence of societal and economic research impact. These links are also critical in enabling students to recognize different employment cultures and provide them opportunities to translate their academic and generic skills into specific work contexts.

Another group of professionals is currently rather neglected though they provide an essential service to the students, supervisors, and institutions as a whole. Research developers, a relatively new role largely occupied by people with doctorates, as well as other staff who provide training and support to doctoral researchers, need to have their contributions better recognized, to become further integrated into higher education communities of practice and to have commensurate professional progression routes established. In addition to their eponymous role, frequently they also provide a conduit between students and their supervisors, providing a less fearsome source of pastoral support and guidance about how to respond effectively to the more abstruse features of academic life. Further, what they learn of the students' perspectives can be diplomatically woven into their supervisor training sessions, alerting the latter to students' alternative interpretations of academic and research situations.

Thus there is a triangle of professionals (supervisors – researcher developers – employers) charged with preparing postgraduate researchers for life beyond the degree. They are themselves learning to work together to this end, realizing as they do so that they can also provide each other mutual support. This, like all attitude change, is unlikely to be a rapid universal transformation – it is still in the chrysalis stage. Yet there is hope that research can flourish through concerted efforts at cooperation, becoming less a competitive battle and more a collaborative work of art.

References

Archer, Will. 2016. International Postgraduate Research Students: The UK's Competitive Advantage, UKHE International Unit. http://www.international.ac.uk/media/3722398/International-Postgraduate-Research-Students-The-UK-s-Competitive-Advantage.pdf.

Billot, Jennie. 2010. The imagined and the real: Identifying the tensions for academic identity. *Higher Education and Development* 29 (6): 709–721.

Clarke, Thomas. 2001. The knowledge economy. *Education + Training* 43 (4/5): 189–196. https://doi.org/10.1108/00400910110399184.

Deem, Rosemary, and Kevin J. Brehony. 2005. Management as Ideology: the case of 'new managerialism' in higher education. *Oxford Review of Education* 31: 217–235. https://doi.org/10.1080/03054980500117827.

de Freitas, Sara, Igor Mayer, Sylvester Arnab, and Ian Marshall. 2014. Industrial and academic collaboration: Hybrid models for research and innovation diffusion. *Journal of Higher Education Policy and Management* 36 (1): 2–14. https://doi.org/10.1080/1360080X.2013.825413.

De Grande, Hannalore, Katrien De Boyser, Karen Vandevelde, and Ronan Van Rossem. 2014. From academia to industry: Are doctorate holders ready? *Journal of the Knowledge Economy* 5 (3): 538–561.

Denicolo, Pam M. 2007. The metamorphosis of doctoral education in the UK and Europe: Perspectives from a teacher as learner. In *Making a difference: Challenges for teachers, teaching and teacher education*, ed. J. Butcher and L. McDonald, 235–250. Rotterdam: Sense Publishers.

Denicolo, Pam M. 2010. Bologna ten years on. In: A*cademic exchange no 9 the postgraduate student experience*. York: The Higher Education Academy.

Denicolo, Pam M. 2016. International developments in the purpose and process of the doctorate: Consequences for supervision, examining and the employment of graduates. In *Postgraduate Supervision: Future foci for the knowledge society,* eds. M. Fourie-Malherbe, R. Albertyn, C. Aitchison and E Bitzer 15-32, Stellenbosch:SUN MeDIA.

Denicolo, P.M., and Dawn Duke. 2015. *Employer-academic engagement: A response to the skills and impact agendas*, 2015. December: Paper presented at the Society for Research into Higher Education Annual conference.

Denicolo, Pam, Michael Fuller, and Dianne Berry. 2010. *A review of graduate schools in the UK*. Lichfield: UK Council for Graduate Education.

Denicolo, Pam, and Chris Park. 2013. Doctorateness – An elusive concept. In *Critical Issues in Higher Education*, ed. M. Kompf and P. Denicolo, 191–198. Sense: Rotterdam.

Duke, Dawn C. 2015. Creating a Community of Postgraduate Researchers and Local SMEs. Paper presented at the UK Council for Graduate Education, July 2015.

Duke, Dawn C., Veronica Benson, and Pam Denicolo. 2015. Fighting for physics: Proliferating pervasive partnerships. Paper presented at the UK Council for Graduate Education, July 2015.

Duke, Dawn C. and Pam Denicolo. 2016. The whole is greater than the sum of its parts: Employer-doctoral researcher engagement facilitated by cross-institutional collaboration, paper presented at the EUA-CDE conference, Tarragona, June 2016.

European University Association. 2016. *Doctoral education-taking Salzburg forward: Implementation and new challenges*. Brussels: EUA-CDE.

Fuhrmann, Cynthia N., D.G. Halme, P.S. O'Sullivan, and B. Lindstaedt. 2011. Improving graduate education to support a branching career pipeline: Recommendations based on a survey of doctoral students in the basic biomedical sciences. *CBE-Life Sciences Education* 10: 239–249.

Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. 1994. *The production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage Publications.

Gilbert, Rob. 2004. A framework for evaluating the doctoral curriculum. *Assessment and Evaluation in Higher Education.* 29 (3): 299–309.
Golde, Chris M., and George E. Walker, eds. 2006. *Envisioning the future of doctoral education*. San Francisco: Jossey-Bass.
Halse, Christine, and Janne Malfroy. 2010. Retheorizing doctoral supervision as professionalwork. *Studies in Higher Education* 35 (1): 79–92.
Harris, Martin. 1996. *Review of postgraduate education*. London: Higher Education Funding Council for England.
Hodge, Alison. 2010. *Review of progress in implementing the recommendations of sir GarethRoberts, regarding employability and career development of PhD students and research staff*. London: RCUK (Research Councils UK).
Jackson, Denise, and Grant Michelson. 2015. Factors influencing the employment of Australian PhD graduates. *Studies in Higher Education* 40 (9): 1660–1678.
Jorgensen, Thomas. 2014. Global trends in doctoral education and the European perspective. *Journal of the European Higher Education Area* 1: 17–34.
Leitch, Sandy S. 2006. *Prosperity for all in the global economy- world class skills*. London: HM Treasury.
Lucia, Oscar, Jose M. Burdio, Jesus Acero, Luis A. Barragán, and Jose R. Garcia. 2012. Educational opportunities based on the university-industry synergies in an open innovation framework. *European Journal of Engineering Education* 37 (1): 15–28. https://doi.org/10.1080/03043797.2011.644762.
LERU (League of European Research Universities). 2010. *Doctoral degrees beyond 2010: Training talented researchers for society.* Leuven: LERU.
LERU (League of European Research Universities). 2014. *Good Practice Elements in Doctoral Training*, Advice Paper No. 15. Leuven: LERU.
Marcketti, Sara B., and Elena Karpova. 2014. Getting ready for the real world: Student perspectives on bringing industry collaboration into the classroom. *Journal of Family & Consumer Sciences* 106: 1.
Manathunga, Catherine, Rachel Pitt, and Christa Critchley. 2009. Graduate attribute development and employment outcomes: Tracking PhD graduates. *Assessment & Evaluation in Higher Education* 34 (1): 91–103.
Nowotny, Helga, Peter B. Scott, and Michael Gibbons. 2003. "Mode 2" revisited: The New Production of Knowledge. In *Minerva*, vol. 41, 179–194. Dordrecht: Kluwer.
OECD. 2014. *Education at a glance 2014: OECD indicators*. Paris: OECD Publishing. Retrieved 12 Oct 2015, https://doi.org/10.1787/eag-2014-en.
Prada, Filomena, and John Peacock. 2015. The Quality of Doctoral Training and Employability of Doctorate Holders: The Views of Doctoral Candidates and Junior Researchers. In *The European Higher Education Area*, 593–612. Dordrecht: Springer.
Park, Chris. 2007. *Redefining the doctorate*. London: The Higher Education Academy.
Perkmann, Marcus, Valentina Tartari, Maureen McKelvey, Erkko Autiop, Anders Brostrom, Pablo D'Este, Riccardo Fini, Aldo Geuna, Rosa Grimaldi, Alan Hughes, Stefan Krabel, Michael Kitson, Patrick Llerena, Francesco Lissoni, Ammon Salter, and Maurizio Sobrero. 2013. Academic engagement and commercialisation: A review of the literature on university–industry relations. *Research Policy* 42: 423–442.
Roberts, Gareth. 2002. *SET for success. The supply of people with science, technology, engineering and maths skills*. London: HM Treasury.
Rudd, Elizabeth., and Maresi Nerad. 2014. Career preparation in PHD programs: Results of a national survey of early career geographers. *GeoJournal* 80 (2): 181–186.
Tinkler, Penny, and Carolyn Jackson. 2004. *The doctoral examination process*. Maidenhead: Open University Press.

Tu, Yaqing, Huiyue Yang, Li Shu, Tu Wangshu, and Baoxin Chen. 2015. A mode of government-Enterprise-University-institute-employer cooperation for innovation postgraduate cultivation. *Universal Journal of Educational Research* 3 (2): 93–98.

UUK. 2015. *Patterns and trends in UK higher education*. London: Universities UK. Retrieved 14 Apr 2016, http://issuu.com/universitiesuk/docs/patternsandtrends2015_23aa97d68a4d62?e=15132110/31968656.

Walsh, Elaine, Caroline Hargreaves, Ulrike Hillemann-Delaney, and Jizhen Li. 2014. Doctoral researchers' views on entrepreneurship: Ranging from 'a responsibility to improve the future' to 'a dirty word'. *Studies in Higher Education* 40 (5): 775–790.

Winter, Richard. 2009. Academic manager or managed academic? Academic identity schisms in higher education. *Higher Education Policy and Management* 31 (2): 121–131.

Using the Psychology of Working Framework and the Social Cognitive Career Theory to Build a Research Team

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Peter McIlveen, Harsha N. Perera, and David L. Blustein

Contents

Abstract

This chapter describes the development of a microcosmic research culture, embodied as ACCELL – the Australian Collaboratory for Career Employment & Learning for Living. The conceptual foundations of ACCELL are overviewed. The social cognitive career theory (SCCT; Lent and Brown, J Counsel Psychol 60(4): 557–568, 2013) is used as a pedagogical framework for enacting the axiology of the psychology of working (Blustein, The psychology of working:

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a new perspective for career development, counseling, and public policy. Lawrence Erlbaum Associates, Mahwah, 2006). In combination, these theoretical perspectives may be used to inform research educators' approaches to teaching research students with the aim of enhancing their interests, goals, and actions that constitute a research career. This approach is exemplified by a small research team dedicated to advancing doctoral education and research in the disciplinary field of vocational psychology and its applied professional form, career development. Its establishment and maintenance serves as a case study about building a research team with limited financial resources to do so.

Keywords
ACCELL · SCCT · Psychology of Working · Doctoral education · Research team · Vocational psychology

This chapter is about the ongoing development of the Australian Collaboratory for Career Employability & Learning for Living (ACCELL). We argue that ACCELL exists on the basis of a relational model of working (Blustein 2011) that overtly implements an ethical stance to operationalize a social cognitive theory of professional learning. First, we describe ACCELL's initiation as an organizational entity and then progress to outlining its multidisciplinary, relational, and ethical roots. Second, we describe the conceptual foundations of the ethical stance. Finally, we describe the model of doctorate education using a social cognitive approach.

The Case: ACCELL

ACCELL is, for want of a better term, a "research team." The term research team is hedged in inverted commas for provocative effect, to highlight its ambiguity. ACCELL is not officially recognized as a research team; it has no formal contractual arrangements; it is not a designated cost-center with its own line in a budget; it has no guaranteed sources of finance to operate, no administrative aid, and no dedicated facilities. On these accounts, ACCELL should not exist, but it does.

Organizational Context and Establishment

ACCELL emerged at the University of Southern Queensland (USQ). The university awarded the first author a modest start-up grant to establish a multidisciplinary research team under the aegis of the university's Research Leadership Development Program (RLDP). The award was based on an open call for submissions that were to include a formal proposal for initiatives that would build the university's research capacity. The RLDP was a leadership development program that extended over 1 year and included regular professional development seminars. The grant included funds to host ACCELL's research mentor for 1 week and for the first author to make

a reciprocal visit to the mentor's university. The grant also included funds to conduct in-house strategic planning meetings to determine ACCELL's functions and outputs over the ensuing year. Inasmuch an impetus to ACCELL's emergence, the funds were secondary to the RLDP's imprimatur to do something different, creative, something that would make a real difference to the work of the academic staff who joined ACCELL and their students.

Original Multidisciplinary Design

Under the conditions of the RLDP grant, the team leader invited a select team of experts to act as "theme leaders" in the domains of: Curriculum & Pedagogy; Educational Transitions; Measurement and Statistical Modeling; and Transdisciplinary Integration. These themes were generated in discussions with the academic staff who ultimately were invited to take on the role of theme leaders. In addition, the RLDP required the appointment of an international research mentor to support the team's work. The team leader submitted nominations for the selection of mentor, who was to be an internationally recognized and acknowledged expert in the field of vocational psychology. The third author accepted the invitation.

The notion of disciplinary convergence is not unfamiliar to the field of career development. There have been successive exploratory missions to scope the potential for converging different strands of the discipline (Savickas and Lent 1994). Broader still, there have been calls for convergence with other subdisciplines within psychology, such as organizational psychology (Collin and Patton 2009), and not so close to home, linguistics (Collin 2007). Thus, by design, ACCELL comprises a team of scholars from different intellectual disciplines and professional fields. Rather than solely drawing on the discipline that is typical in the field of career development (i.e., vocational psychology), ACCELL draws scholars from a wider range of social science disciplines (e.g., early childhood education, special education, linguistics) to converge their expertise with the discourse of vocational psychology.

Integral to ACCELL's multidisciplinary composition is the goal to facilitate *transformative learning* (McIlveen 2012; Mezirow 2009) within its members and the audiences of its research outputs. That is, ACCELL's research culture is to foster new perspectives so as to generate new conceptual, methodological, and pragmatic vistas on old problems that have ostensibly grown stale in the literature (cf. generativity in Gergen 1992). For example, ACCELL is reinvigorating research into agriculture because vocational psychology can and ethically should contribute toward sustainable supply of food and fiber to the world (McIlveen 2015b).

Of course, there are other excellent research teams devoted to research and development in the field of career development, such as the International Centre for Career Guidance Studies at the University of Derby, with expertise in sociology and labor studies, among others. Another outstanding example is the Career Centre at Florida State University, which draws on the traditional discipline, vocational psychology. ACCELL's point of difference, however, is that its research draws on

other disciplinary perspectives and, moreover, draws their differences into the discourse of vocational psychology.

Relationships

ACCELL has not received nor relied on a recurrent fund for its existence since the RLDP funds were expended. ACCELL lives without a drip-feed of funding; it is innervated by its members who are committed to research in and of itself. Thus, on some measures, the RLDP was successful in seeding a research team. But there is more to its success than just a seeding grant. ACCELL is held together by a *psychological contract* (Hall and Moss 1998) among its members, a bond of trust, innovation, and collegiality. No amount of coin can purchase such beauty. Trust among colleagues is a uniquely human feeling that can never be sullied by managerial impositions and strictures. Thus, ACCELL is independent of any institutional contract and does not stand by as lickspittles waiting for a command and tip.

Although liberating, this independent attitude is expensive in personal terms, for it requires a commitment by its members to work above and beyond the standard terms and conditions of their employment contracts that have been formulated by collective bargaining. To be precise, this commitment to research means that ACCELL's members work more than the standard hours per fortnight to remain productive as researchers (e.g., publish journal articles). In the contemporary industry of higher education, such self-determined privations are a necessary evil to sustain research in the absence of substantive funding.

The Ethic of Critical Reflexivity

Vocational psychology scholars are demonstrably able, interested, and willing to rigorously enquire and document the meaningfulness of work. In recent years, there has been a rise of research into meaning-oriented constructs such as *calling* (Dik and Duffy 2009), *narrative* (Richardson 2012), *life themes* (Savickas 2013), and nothing less than the bold existential objective of *life designing* (Savickas 2012). The notion of a career practitioner and client together designing a life of meaning and mattering should not be taken lightly. This type of professional work involves strict ethical standards. It also demands an ethic of critical reflexivity (McIlveen 2015a).

It is surprising, therefore, that this scientific discipline that takes the meaning of working as one of its definitive phenomena of enquiry and intervention is remarkably bereft of reflexive research that accounts for its scholars' experiences of the meaningfulness of their own work. Is it that they take no interest in how they do their research, create and teach their knowledge, and implement their evidence-based professional practices? This lacking cannot be for the want of an established method to do perform such reflexive research. The research method

autoethnography (Ellis and Adams 2014), for example, can be used to investigate the vocational psychology researcher-in-the-research (e.g., McIlveen 2007; McIlveen et al. 2010), but autoethnography has neither status nor impact in methodological lore of vocational psychology. It is as if vocational psychology scholars do not take themselves to be a legitimate subject of enquiry, even though the work they do is meaningful, worthy, and impactful in its applications in applied fields such as counseling, employment, and education. This irony – or perhaps hypocrisy – is lamentable; for it is the case the other social science disciplines (e.g., sociology and its applications in social work and education) make good use of reflexive methods for the refinement of research methods, production of knowledge, and solving ethical conundrums.

Scholars of any intellectual discipline are necessarily adult learners (Mezirow 1991) with unique perspectives and schema for assimilating novel experiences and (re)interpreting past experiences in light of new evidence. Scholars are changed by how they meaningfully assimilate experiences into the narratives of their lives. In the case of vocational psychology, there is a piquant subjectivity to being a scholar of an objective science. As researchers, on the one hand we are devoted to the exploration of phenomena and the explication of theories about how individuals self-manage satisfying work lives and careers; on the other hand, as educators, we are devoted to the management and mentoring of novice scholars so that they may enjoy satisfying work lives and careers. In other words, we aim to practice what we teach, or preach as it may be. This is challenging duality. Our intention here is to shine the light of reflexive enquiry on ourselves to illuminate why the SCCT was chosen as the preferred theory for ACCELL's construction as a research team. We could have chosen any number of theories for our work but we did not. Why? Our response is to juxtapose a scientific theory (i.e., the SCCT), selected for its empirical and pedagogical merits, alongside an ethical framework for the selection and application of that theory in research and teaching.

The SCCT is scientific psychological theory that posits the ingredients and relations among the ingredients that may be used to guide the composition of a workplace team but, as a scientific theory, the SCCT is ethically inert. The tenets of SCCT cannot inform the meaning and purpose for a team's existence, neither on the basis of duty and obligation for doing what is good and right, as in deontological ethics, nor out of the aim to produce benefits for the many, as in utilitarianism. Paradoxically, scholars within psychology (Prilleltensky 1997, 1998) and within other disciplines (Foucault 1972, 1973) have long argued that the scientific discipline psychology is far from ethically inert. The ineluctable truth is that psychology is an intrinsically human endeavor – it is made for individuals, made up of individuals, and made by individuals whose personal and collective axiologies are as diverse as the manifold discipline itself. As individuals, they hold values, aspirations, and prejudices like any other individual. As members of subdisciplinary communities (e.g., vocational psychology, clinical psychology), they hold collective values, aspirations, and prejudices, just like any other intellectual sect. It is inconceivable that these values, aspirations, and prejudices do not imbue the ways of working – knowing, doing, and being – in vocational psychology.

Adaptive Capacity

The foundation mission was "ACCELL conducts applied research into transformative career development learning to enhance adaptive capacity: engagement in learning and work, employability, and entrepreneurship. . .. ACCELL's program of research addresses the role of personality dispositions and non-cognitive adaptabilities (e.g., career optimism, emotional intelligence, grit, self-efficacy) in individuals' engagement in working and learning, and the enhancement of occupational success." The centerpiece of the mission is the notion, *adaptive capacity.* There is no need to rehearse here the arguments that the world-of-work has changed in recent decades. What matters now is how individuals respond to the characteristics and pace of change that influences their lives. Thus, ACCELL uses the notion of adaptive capacity to mean the resources, both psychological and social, that individuals use for their resilience in an environment in flux. Underpinning this perspective on adaptive capacity is the meaning and purpose of work in people lives: survival, power, and self-determination (Blustein 2006). Accordingly, adaptive capacity is used as a shorthand expression to represent the philosophical framework upon which ACCELL is based: *the psychology of working* (Blustein 2006).

Psychology of Working Framework

Any given phenomenon within the remit of vocational psychology may be the subject of several different theories. The theories are improved and refined by progressively testing hypotheses in the presence of evidence deemed measurable according to the tenets of the theory that is used to generate the hypotheses. There is no one perfect theory; there is a panoply of theories; scholars need only choose a theory the best suits their means and ends and then get on with the work of researching and teaching. Thus, deployment of the SCCT, or any other theory for that matter, to compose a work team must necessarily be a choice based on a certain perspective. And as the critics of psychology argue (Prilleltensky 1997, 1998), such choices are not necessarily objective and benign; they are inherently choices derived from ethical perspectives enacted consciously or unconsciously. In the case of ACCELL, the choice was conscious, deliberate, and motivated by deontological ethics and the choice was informed by the psychology of working framework (Blustein 2006) because it is the ethical treatise for vocational psychology.

The psychology of working framework (PWF) began initially as a critique of existing discourses in career development and has transformed into a perspective or framework. At this point, the PWF has generated two theories about working: the relational theory of working (Blustein 2011) and the newly developed psychology of working theory (Duffy et al. 2016). In this chapter, we focus on specific aspects of the PWF that are particularly relevant to understanding the adaptive capacity of ACCELL. For further information about the PWF, we refer readers to Blustein's earlier work (Blustein 2006, 2008, 2013) and to the new aforementioned theories (Blustein 2011; Duffy et al. 2016).

The driving thematic agenda of the PWF has been directed toward developing a perspective that would encompass all working people, which contrasts with the traditional discourses in career development that have evolved to consider primarily the working lives of people with some degree of choice in their lives. Thus, one way that the PWF has influenced ACCELL is in the focus on developing research that encompasses the full range of people within Australia who would like to be part of the working world. The PWF is clearly inspired by an inclusive ethic and an explicit intention to provide knowledge that will foster greater human rights for workers (Blustein 2006). ACCELL's focus on food and fiber reflects its values of considering not simply those with university educations, but also those working on farms and in production of the natural resources that have contributed so much to the Australian economy.

In addition to developing ideas, research directions, and practice advice for the full gamut of people who would like to engage in marketplace or caregiving work, the PWF has also been applied to the workplace. An inherent aspect of the PWF is that the quality of the workplace is essential in developing the full potential of workers and in enhancing the quality of communities. Building on an integrative analysis of liberation psychology, work and industrial/organizational psychology, and vocational psychology, the PWF proposed that working, when it is optimally available and dignified, can meet a number of essential human needs. When a workplace is functioning optimally, it can help individuals meet their needs for survival, social connection, and self-determination.

In relation to the ACCELL context, the environment that has been designed seeks to meet these three needs consistently and without precondition. The fact that the team members are working in some capacity for the University or related organizations provides them with a source of survival. The close interpersonal connections described earlier, as evident in the career contract, affirm the participants' capacity to meet their needs for social connection. The needs for self-determination, as described next, reflect the core aspect of the adaptive capacity that is so key to the success of ACCELL.

In developing the PWF, Blustein (2006) applied the thoughtful work on human motivation that has been developed by Deci and Ryan (1985) known as self-determination theory. In brief, Deci and Ryan offered self-determination as an alternative to the deterministic motivational theories that had dominated the motivational psychology discourse in the mid-twentieth century. In contrast to views of human beings as captives of external contingencies or internal drives, Deci and Ryan advanced the notion that people are internally directed toward engaging in activities that are intrinsically motivating. While the focus on intrinsic motivation seems intuitive and not particularly innovative from a theoretical perspective, Deci and Ryan built on this notion by advancing complex and empirically supported ideas about how people can become self-determined and motivated to engage in activities that are extrinsically motivating. In short, people are likely to internalize extrinsically motivating tasks when they value the activity and outcome and when selected conditions are in place in the environment. The three attributes that have been identified as particularly crucial for the internalization of extrinsically motivating tasks are summarized below and applied to the ACCELL context.

Autonomy

A key attribute of self-determination theory (Ryan and Deci 2000) is autonomy, which is the experience of feeling in control of one's actions. The presence of autonomy is essential in promoting self-determination; people who are actually in control of their environment are more likely to engage in tasks, even those that are not intrinsically interesting. In the case of ACCELL, the fact that the projects and initiatives are supported in a consensus-driven manner provides a clear exemplar of the manifestation of autonomy within the research team. While individual members may conduct their own other projects that are not associated with ACCELL (e.g., with other research groups), the members openly contribute their ideas for new projects and take the lead of those projects so that their autonomy flourishes within a supportive team.

Relatedness

As stated earlier in this chapter, there is a strong relational bond that exists among the members of ACCELL; people are working together, without compensation or course releases, because they value the work and they value each other. The team members are clearly kind to each other and do all they can to promote the well-being of all of the participants. Moreover, the projects provide a noncompetitive platform for relational connectedness, underscoring the importance of the outcomes of the research as opposed to individual gain.

Competence

Another key attribute in the trilogy of contextual factors promoting self-determination is the development of competence. People are far more likely to engage in activities when they are competent and are able to experience their skills in a clear and accessible fashion (Deci and Ryan 1985). The ACCELL team has diverse areas of expertise, including quantitative design, qualitative inquiry, theory development, philosophy of science, extensive content knowledge, and an unbridled level of curiosity about the world. These attributes reflect a group competence; for the individual team members, the notion that they can rely on others to flesh out skills that they may not have creates a level of confidence that promotes taking on challenges and developing complex solutions to the challenges that face people in our region.

A final attribute of the PWF's conceptualization of a supportive work climate is the notion that people should be able to value the outcome of their efforts. Even when the tasks may be tedious or strenuous, knowing that the results will promote the goals that are integral to ACCELL provides a powerful inspiration for the team members, resulting in the experience of self-determination.

Social Cognitive Career Theory and Doctoral Education

Research teams are intrinsically social constructions comprising individuals with both shared and individual goals for their respective careers. The social cognitive career theory (SCCT) (Lent and Brown 2013) may be used by researchers and research educators to conceptualize the dynamics among these psychological factors that contribute to a successful career in research. The SCCT is the most frequently cited theory in the social cognitive school within the field of vocational psychology and career development. The tenets of the SCCT inform career development learning and the determination of which factors are amenable to teaching.

From the perspective of SCCT, researchers' behavior is influenced by environment, dispositional traits, and social-cognitive factors. For research educators and research students, the imperative is to ascertain which factors have pedagogical utility. As social constructions, research teams can be conceptualized in terms of psychological – cognitive, behavioral, emotional – factors moderated by contextual influences. It is within this complex of factors that researchers' ethics, self-efficacy, and outcome expectations for conducting research emerge as their interests, goals, and actions for a research career.

The SCCT may also offer an integrative lens to conceptualize academic development during doctoral training (Lent et al. 1994). Although the SCCT is typically advanced as a career development theory that seeks to explain career development processes (e.g., vocational interest development, career choices, and work performance), the theory also encompasses academic processes, such as academic interest development, choices, and achievement (Lent et al. 2002). As Lent et al. (2002) note, the SCCT attempts to bridge accounts of academic and career development as these processes are conceptually and developmentally related. Indeed, the SCCT has been used to conceptualize research training environments (Bieschke 2006), including doctoral study (Bishop and Bieschke 1998; Kahn and Scott 1997). Of the several SCCT models (i.e., models of satisfaction, interest development, choices, performance attainments), the model of interest development may be most relevant for conceptualizing academic development in the context of doctoral studies.

The SCCT model of interest development implicates a network of experiential, cognitive, and behavioral constructs in explaining the process of interest development. Figure 1 shows our rendering of the development model for doctoral researchers. A central postulate of the model is that academic interest formation is a function of both self-efficacy beliefs and outcome expectations regarding the specific academic activity in which the individual is involved. Self-efficacy refers to students' beliefs about their capability to perform specific behaviors and execute specific tasks required to attain desired levels of attainment (Bandura 1997). Outcome expectations are individuals' beliefs about the outcomes of performing certain behaviors.

Accordingly, self-efficacy is concerned with the question "can I do this?" whereas outcome expectations concern the question "If I do this, what will happen?" In the context of doctoral studies, from the SCCT perspective, the development and

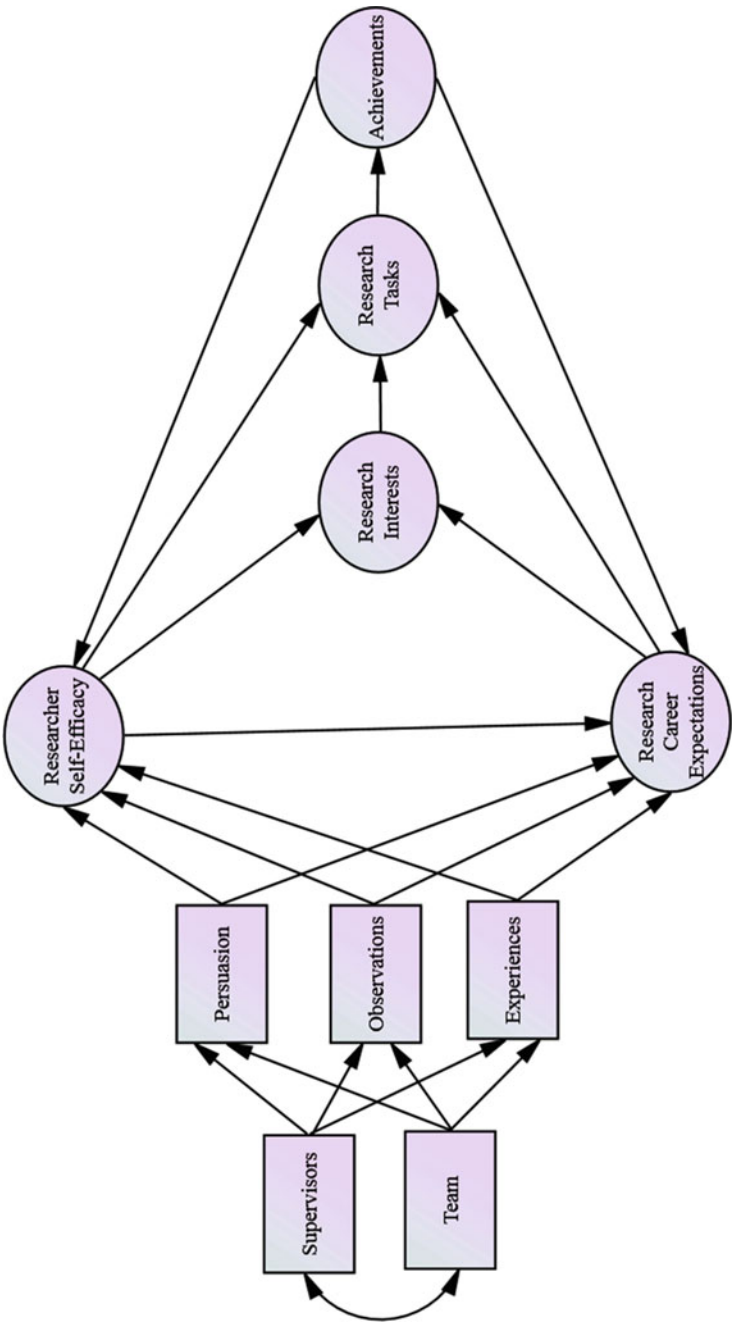

Fig. 1 A social cognitive career theory model of doctoral research development

maintenance of interest in doctoral research activities is likely when students perceive themselves as capable of executing specific research-related tasks (i.e., research self-efficacy beliefs; e.g., locating and reviewing research literature, designing studies, conducting statistical analyses) and when they expect that performing these behaviors will lead to desired outcomes, such as completing their doctoral studies or enhancing research productivity (i.e., research-related outcome expectations). Contrariwise, individuals may be less likely to develop or maintain interests in doctoral research activities when they perceive themselves as less capable or incapable of performing required research-related behaviors or when they expect unfavorable outcomes to emerge from performing these specific behaviors. As self-efficacy and outcomes expectations are viewed as malleable and dynamic self-beliefs that are influenced by people's interactions with the environment, doctoral advisors and related support personnel (e.g., institutional research training staff) may play a crucial role in nurturing students' efficacy beliefs and outcomes expectations through their provision of supportive doctoral learning environments.

The SCCT model of interest development also posits that self-efficacy beliefs and outcome expectations are influenced by learning experiences. Indeed, self-efficacy and outcome expectations are viewed as the cognitive mediators through which learning experiences affect career interests and behaviors. Learning experiences provide sources of information through which efficacy beliefs and outcome expectations are developed and modified. The most influential source of efficacy information is performance accomplishments or mastery learning experiences. In the context of doctoral studies, the experience of success at a valued doctoral activity, such as attaining confirmation of candidature following an expert review of progress, may increase self-efficacy for completing core doctoral tasks. Indeed, personal performance accomplishments have been shown to predict increases in self-efficacy beliefs (Luzzo et al. 1999). Performance accomplishments may also increase students' outcome expectations insofar as their appraisals of the outcome of performing particular research-related behaviors in the past are sufficiently favorable. For instance, attaining confirmation of candidature following a successful oral defense may result in positive outcome expectations for subsequent reviews of progress.

In addition to performance accomplishments, vicarious learning experiences, verbal persuasion, and emotional arousal may also serve as sources of information for self-efficacy beliefs and outcome expectations. Increases in self-efficacy for performing research-related behaviors that are crucial for academic development in doctoral studies may be more likely for students who observe others successfully accomplish doctoral tasks. This idea is not unfamiliar to doctoral education in Australia. For instance, the confirmation of candidature milestone in the doctoral curriculum is typically a communal event where students can observe each other complete the core *viva voce* requirement. In addition, specific research training programs offered by institutional research units, such as using and searching databases, managing references, and conducting statistical analyses, involve the modeling of requisite skills by experts, constituting important observational learning experiences. When combined with mastery performance accomplishments, vicarious

learning experiences can foster self-efficacy beliefs. Observational learning, or vicarious learning, experience may also influence outcome expectations for doctoral candidates to the extent that they may observe outcomes generated by others' participation in comparable performance tasks. Although less robust sources of information, social persuasion (e.g., receiving constructive feedback and encouragement from advisors and peers) and emotional arousal (e.g., down regulation of negative affect and up regulation of positive affect) in task performance may also increase self-efficacy beliefs and outcome expectations (Lent et al. 2002).

From the SCCT perspective, outcome expectations may also be influenced by self-efficacy beliefs. Across a range of education and training domains, such as tertiary engineering (Lent et al. 2005, 2008b), middle-school math and science (Navarro et al. 2007), computing disciplines (Lent et al. 2008a), and research training environments (Bishop and Bieschke 1998), domain-specific self-efficacy beliefs have found to promote positive outcome expectations. Under conditions of doctoral study, candidates who perceive themselves as capable of performing specific research-related behaviors required for optimal task performance are more likely to anticipate favorable outcomes from executing the specific behaviors.

Finally, the SCCT model of interest development holds that the development and maintenance of academic interests, triggered by self-efficacy and outcome expectations, fosters students' intentions and goals for academic activity engagement. For example, doctoral candidates who develop and maintain interests in research-related activities in which they are sufficiently efficacious and anticipate favorable outcomes may, in turn, be more likely to develop intentions and set goals for engaging in research-related activities that promote doctoral progression. As shown in Fig. 1, the generation of these activity-related goals and intentions is likely to increase the chances that doctoral candidates engage in research-related activities and, in turn, attain valued doctoral outcomes, including persistence in the doctoral program and ultimately the completion of candidature.

There is evidence that the SCCT model of interest development provides an account of researcher interests and behavior. For instance, Kahn and Scott (1997) found that perceptions of the research training environment and research self-efficacy were directly related to research interests in counseling psychology doctoral candidates. Research interests, in turn, were shown to predict research career goals and research productivity (Kahn and Scott 1997). These findings were replicated and extended by Bishop and Bieschke (1998) who also tested the SCCT interest development model in counseling psychology doctoral candidates to elucidate the processes involved in research interest. These researchers found that research self-efficacy and outcomes expectations mediated the effect of researcher training environment on interest in research. In addition, research self-efficacy was directly associated with research interests and indirectly associated via research outcome expectations. Taken together, the findings of these studies suggest that the SCCT model of interest development may be a useful framework for conceptualizing academic development during the doctoral research training process.

References

Bandura, A. 1997. *Self-efficacy: The exercise of control*. New York: Freeman.

Bieschke, K.J. 2006. Research self-efficacy beliefs and research outcome expectations: Implications for developing scientifically minded psychologists. *Journal of Career Assessment* 14 (1): 77–91. https://doi.org/10.1177/1069072705281366.

Bishop, R.M., and K.J. Bieschke. 1998. Applying social cognitive theory to interest in research among counseling psychology doctoral students: A path analysis. *Journal of Counseling Psychology* 45 (2): 182–188. https://doi.org/10.1037/0022-0167.45.2.182.

Blustein, D.L. 2006. *The psychology of working: A new perspective for career development, counseling, and public policy*. Mahwah: Lawrence Erlbaum Associates.

Blustein, D.L. 2008. The role of work in psychological health and well-being: A conceptual, historical, and public policy perspective. *American Psychologist* 63 (4): 228–240. https://doi.org/10.1037/0003-066x.63.4.228.

Blustein, D.L. 2011. A relational theory of working. *Journal of Vocational Behavior* 79 (1): 1–17. https://doi.org/10.1016/j.jvb.2010.10.004.

Blustein, D.L. 2013. The psychology of working: A new perspective for a new era. In *The Oxford handbook of the psychology of working*, ed. D.L. Blustein, 3–18. New York: Oxford University Press.

Collin, A. 2007. Contributions and challenges to vocational psychology from other disciplines: Examples from narrative and narratology. *International Journal for Educational and Vocational Guidance* 7 (3): 159–167. https://doi.org/10.1007/s10775-007-9122-8.

Collin, A., and W. Patton, eds. 2009. *Vocational psychological and organisational perspectives on career: Towards a multidisciplinary dailogue*. Rotterdam: Sense Publishers.

Deci, E.L., and R.M. Ryan. 1985. *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Publishing.

Dik, B.J., and R.D. Duffy. 2009. Calling and vocation at work: Definitions and prospects for research and practice. *The Counseling Psychologist* 37 (3): 424–450. https://doi.org/10.1177/0011000008316430.

Duffy, R.D., D.L. Blustein, M.A. Diemer, and K.L. Autin. 2016. The psychology of working theory. *Journal of Counseling Psychology* 63 (2): 127–148. https://doi.org/10.1037/cou0000140.

Ellis, C., and E. Adams. 2014. The purposes, practices, and principles of autoethnographic research. In *The Oxford handbook of qualitative research*, 254–276. Oxford: Oxford University Press.

Foucault, M. 1972. *The archaeology of knowledge,* trans. A.M.S. Smith. London: Routledge.

Foucault, M. 1973. *The birth of the clinic* (Vintage Books 1994 ed.). New York: Random House.

Gergen, K.J. 1992. Toward a postmodern psychology. In *Psychology and postmodernism*, ed. S. Kvale, 17–30. London: Sage.

Hall, D., and J.E. Moss. 1998. The new protean career contract: Helping organizations and employees adapt. *Organizational Dynamics* 26: 22–37.

Kahn, J.H., and N.A. Scott. 1997. Predictors of research productivity and science-related career goals among counseling psychology doctoral students. *The Counseling Psychologist* 25 (1): 38–67. https://doi.org/10.1177/0011000097251005.

Lent, R.W., and S.D. Brown. 2013. Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology* 60 (4): 557–568. https://doi.org/10.1037/a0033446.

Lent, R.W., S.D. Brown, and G. Hackett. 1994. Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior* 45 (1): 79–122. https://doi.org/10.1006/jvbe.1994.1027.

Lent, R.W., S.D. Brown, and G. Hackett. 2002. Social cognitive career theory. In *Career choice and development*, ed. D. Browne, vol. 4, 255–311. San Francisco: Jossey-Bass.

Lent, R.W., S.D. Brown, H.-B. Sheu, J. Schmidt, B.R. Brenner, C.S. Gloster, and D. Treistman. 2005. Social cognitive predictors of academic interests and goals in engineering: Utility for

women and students at historically black universities. *Journal of Counseling Psychology* 52 (1): 84–92. https://doi.org/10.1037/0022-0167.52.1.84.

Lent, R.W., A.M. Lopez Jr., F.G. Lopez, and H.-B. Sheu. 2008a. Social cognitive career theory and the prediction of interests and choice goals in the computing disciplines. *Journal of Vocational Behavior* 73 (1): 52–62. https://doi.org/10.1016/j.jvb.2008.01.002.

Lent, R.W., H.-B. Sheu, D. Singley, J.A. Schmidt, L.C. Schmidt, and C.S. Gloster. 2008b. Longitudinal relations of self-efficacy to outcome expectations, interests, and major choice goals in engineering students. *Journal of Vocational Behavior* 73 (2): 328–335. https://doi.org/10.1016/j.jvb.2008.07.005.

Luzzo, D.A., P. Hasper, K.A. Albert, M.A. Bibby, and E.A. Martinelli Jr. 1999. Effects of self-efficacy-enhancing interventions on the math/science self-efficacy and career interests, goals, and actions of career undecided college students. *Journal of Counseling Psychology* 46 (2): 233–243. https://doi.org/10.1037/0022-0167.46.2.233.

McIlveen, P. 2007. The genuine scientist-practitioner in vocational psychology: An auto-ethnography. *Qualitative Research in Psychology* 4 (4): 295–311. https://doi.org/10.1080/14780880701522403.

McIlveen, P. 2012. Transformative career development learning: Building capacity for self-determination. In *Constructing capacities: Building capabilities through learning and engagement*, ed. P.A. Danaher, L. de George-Walker, R. Henderson, K.J. Matthews, W. Midgley, K. Noble, M.A. Tyler, and C.H. Arden, 144–159. Newcastle on Tyne: Cambridge Scholars Publishing.

McIlveen, P. 2015a. A reflexive research approach to professional competencies for life designing. In *Handbook of life design: From practice to theory and from theory to practice*, ed. L. Nota and J. Rossier, 269–281. Boston: Hogrefe Publishing.

McIlveen, P. 2015b. A research agenda for the vocational psychology of agriculture. *Australian Journal of Career Development* 24 (3): 157–165. https://doi.org/10.1177/1038416215586005.

McIlveen, P., G. Beccaria, J. du Preez, and W. Patton. 2010. Autoethnography in vocational psychology: Wearing your class on your sleeve. *Journal of Career Development* 37 (3): 599–615. https://doi.org/10.1177/0894845309357048.

Mezirow, J. 1991. *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.

Mezirow, J. 2009. Transformative learning theory. In *Transformative learning in practice insights from community, workplace, and higher education*, ed. J. Mezirow and E.W. Taylor, 18–31. Hoboken: Wiley.

Navarro, R.L., L.Y. Flores, and R.L. Worthington. 2007. Mexican American middle school students' goal intentions in mathematics and science: A test of social cognitive career theory. *Journal of Counseling Psychology* 54 (3): 320–335. https://doi.org/10.1037/0022-0167.54.3.320.

Prilleltensky, I. 1997. Values, assumptions, and practices: Assessing the moral implications of psychological discourse and action. *American Psychologist* 52 (5): 517–535. https://doi.org/10.1037/0003-066X.52.5.517.

Prilleltensky, I. 1998. Values and assumptions about values and assumptions. *American Psychologist* 53 (3): 325–326. https://doi.org/10.1037/0003-066x.53.3.325.

Richardson, M.S. 2012. Counseling for work and relationship. *The Counseling Psychologist* 40 (2): 190–242. https://doi.org/10.1177/0011000011406452.

Ryan, R.M., and E.L. Deci. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55 (1): 68–78.

Savickas, M.L. 2012. Life design: A paradigm for career intervention in the 21st century. *Journal of Counseling & Development* 90 (1): 13. https://doi.org/10.1111/j.1556-6676.2012.00002.x.

Savickas, M.L. 2013. Career construction theory and practice. In *Career development and counseling: Putting theory and research to work*, ed. S.D. Brown and R.W. Lent, 2nd ed., 147–183. Hoboken: Wiley.

Savickas, M.L., and R.W. Lent, eds. 1994. *Convergence in career development theories*. Palo Alto: CPP Books.

Developing Mixed Methods Research Skills: Becoming Methodologically Trilingual

30

Roslyn Cameron

Contents

Abstract

The aim of this chapter is fourfold. Firstly, mixed methods research is described and situated as the third methodological movement. Secondly trends in the utilization of MMR across disciplines is presented before an exploration of the key issues in relation to the teaching of mixed methods research to postgraduate research students unfolds. Lastly, a core curriculum for postgraduate MMR courses and professional development activities for masters and doctoral supervisory staff is proposed.

Keywords

Mixed methods research · Teaching postgradaute research skills · Methodologically trilingual

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Mixed Methods Research (MMR): The Third Methodological Movement

Tashakkori and Teddlie call mixed methods the "third methodological movement" (2003, p. ix) which has seen its popularity growing steadily since the publication of the *Sage Handbook of Mixed Methods in Social & Behavioral Research* in 2003. There are a variety of definitions of mixed methods research, in fact Johnson et al. (2007) published an article on defining mixed methods research and found 19 differing definitions. For the purposes of this chapter, the concluding definitions offered by Johnson et al. (2007, p. 123) are presented below. The first is a general definition followed by a more specific definition:

> Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.

This definition refers to mixed methods research as a type of research:

> A mixed methods study would involve mixing within a single study; a mixed method program would involve mixing within a program of research and the mixing might occur across a closely related set of studies.

Traditionally, research training in higher education takes the form of perhaps an introduction to research methods course, a quantitative research skills unit and a qualitative research unit, and a variety of discipline specific research method units. Mixed methods research is rarely taught at postgraduate level despite its growing popularity and its emphasis on applied research. Table 1 summarizes the research training offerings in doctoral studies in management from the eight top ranked universities in Australia sourced through web-based searches of the eight university's respective websites. The Group of Eight Australian universities were selected for this exercise as they are considered the most research intensive of all Australian universities.

As can be seen from this small sample of research training offerings, there are no mixed methods offerings and the divide or dichotomy between qualitative and quantitative research methods remains well in place.

Mixed methods has emerged as the third methodological movement; however, this does not seem to be reflected in the postgraduate research training options in research intensive universities in Australia. The remainder of this chapter is structured around three parts. The first looks at studies which have analyzed the publication rates of MMR studies in scholarly publications. This is done for disciplines within the broader fields of business and management and education. These findings allow researchers to see what publications within disciplines are more accepting of MMR studies and also provide signposts for postgraduate students and researchers for identifying and accessing published mixed methods studies. This is followed by an examination of the key issues and challenges for

Table 1 Group of Eight Australian Universities postgraduate research training (doctoral studies in management)

University	Postgraduate research training units
University of Western Australia *DBA*	Business research: principles and processes Quantitative methods in business research Qualitative methods in business research
University of Melbourne	Website did not specify
Monash University *PhD Management*	Advanced quantitative research methods Advanced qualitative research methods
University of NSW *PhD Management*	Four compulsory core units: Intellectual foundations Introduction to research methods Qualitative research methods Choice of one from the list below: Advanced theory in organization and management Advanced methods in organization and management multilevel modeling
Australian National University *PhD Management*	The doctor of philosophy requires the submission and successful examination of a thesis of up to 100,000 words on an approved topic. The PhD program also includes some preparatory coursework as required by the delegated authority (up to a maximum of 48 units). Examples: Qualitative research methods Management research methods Business research methods Advanced marketing research methods
University of Queensland *PhD Management*	Coursework as recommended by supervisory team: Research process Qualitative business research methods Quantitative business research methods Quantitative business research methods II Research process in business Scientific method in management
University of Adelaide	Website did not specify
University of Sydney *PhD Business*	Successfully complete a maximum of six and a minimum of three coursework units including at least one quantitative and one qualitative unit. Undertake any additional coursework and attend any seminars as determined by their supervisor

teaching mixed methods research to postgraduate students. The Five Ps framework for mixed methods: paradigms, pragmatism, praxis, proficiency, and publishing (Cameron 2011b) is presented and aligned against Bazeley's (2003) learning objectives for the teaching of mixed methods. The concept of "methodological trilingualism" is introduced as an argument for the teaching of MMR in postgraduate research courses within higher education. The chapter ends with a comparative of two postgraduate mixed methods research courses offered at two institutes of higher education in the USA (University of Hawaii – PhDs and University of

Alabama – Department Human Studies). The content of these courses is published in academic literature which discusses the teaching of methodology to postgraduate higher education students. The topics covered in these two courses are compared and provide a good indication of core curriculum for the designing of postgraduate MMR courses. The chapter ends with recommendations for postgraduate research training.

Trends in the Utilization of MMR Across Disciplines

Mixed methods prevalence rate studies are now becoming common place across an array of disciplines. Mixed methods prevalence rate studies involve content analysis of discipline-specific journals over a designated time range and look at identifying the number of mixed methods papers being published and compare these publication rates with those of quantitative and qualitative papers. Molina-Azorin and Cameron (2015) summarized these across several business and management disciplines. Table 2 has been adapted and updated and contains results of MMR prevalence studies across an array of business and management disciplines including: international business; marketing; management; entrepreneurship; HRM; organizational behavior; vocational education and training; career development; project management; information systems; and leadership.

As can be seen from Table 2, MMR appearing in a variety of business and management journals can vary from relatively high rates such as international business and strategic management (*see* Hurmerinta-Peltomaki and Nummela 2006; Molina-Azorin 2011) to relatively low rates such as in marketing and project management (*see* Harrison and Reilly 2011; Cameron et al. 2015). Many of these studies are now dated and more recent prevalence rate studies may show a different trend, as the lead time for publication can be lengthy and the field of mixed methods research has gained in popularity in the last decade. Cameron (2015) summarized mixed methods prevalence rate studies in the field of education. These are summarized in Table 3. The rates for mixed methods research studies published in education journals vary from as low as 6% to as high as 29%.

As can been seen from these two summary tables for business and management disciplines and fields of inquiry within the education discipline, the prevalence of mixed methods published research can vary depending on the discipline/field of inquiry and the traditions of those fields. Nonetheless, mixed methods studies are being published and in some fields to higher rates than qualitative studies (international business, marketing, strategy/strategic management, leadership, and school psychology). In some cases, mixed methods studies are at higher rates of publication than quantitative studies (mathematics education and vocational education and training). Postgraduate students undertaking research training would be well advised to research MMR prevalent rates within their chosen discipline. The chapter now turns to the teaching of mixed methods research to postgraduate students in higher education contexts.

Table 2 Prevalence studies in business disciplines

Studies	Prevalence rates of empirical works			Disciplines/# of journals	Period	Total number of articles reviewed
	QUAN	QUAL	MIXED			
Hurmerinta-Peltomaki and Nummela (2006)	68%	15%	17%	International business/4 journals	4 years (2000–03)	484 articles (394 empirical)
Hanson and Grimmer (2007)	75%	11%	14%	Marketing/3 journals	10 years (1993–2002)	1195 articles (736 empirical)
Molina-Azorin (2008)	78% (80% strategy, 78% operations, 76% entrepreneurship)	10% (5% strategy, 12% operations, 16% entrepreneurship)	12% (15% strategy, 10% operations, 8% entrepreneurship)	Three subfields in management (strategy, operations management, entrepreneurship)/4 journals	5 years (2003–07)	916 articles (732 empirical)
Grimmer and Hanson (2009)	65%	21%	14%	Human resource management/ 1 journal	10 years (1998–2007)	828 articles (633 empirical)
Molina-Azorin and Cameron (2010)	83% (82% strategy, 87% organizational behavior)	5% (4% strategy, 6% organizational behavior)	12% (14% strategy, 7% organizational behavior)	Two subdisciplines within management (strategy and organizational behavior)/2 journals	7 years (2003–09)	871 articles (717 empirical)
Cameron (2010a)	9%	69%	22%	Vocational education and training/1 journal	6 years (2003–08)	152 articles (106 empirical)
Cameron (2010b)	51%	43%	6%	Career development/1 journal	6 years (2004–09)	99 articles (63 empirical)
Cameron (2011a)	46%	40%	14%	Management/conference papers	1 year (2007)	281 papers (197 empirical)
Miller and Cameron (2011)	32%	28%	40%	Business administration/doctor of business administration research projects	12 years (1996–2007)	186 research projects

(*continued*)

Table 2 (continued)

Studies	Prevalence rates of empirical works			Disciplines/# of journals	Period	Total number of articles reviewed
	QUAN	QUAL	MIXED			
Molina-Azorin (2011)	72% (78% strategy, 67% entrepreneurial)	14% (5% strategy, 23% entrepreneurial)	14% (17% strategy, 10% entrepreneurial)	Two subdisciplines within management (strategy and entrepreneurship)/4 journals	10 years (1997–2006) Strategic 8 years (2000–07) Entrepreneurial	1330 articles (1072 empirical)
Harrison and Reilly (2011)	–	–	2%	Marketing/9 journals	7 years (2003–09)	2596 articles
Molina-Azorin (2012)	77%	8%	15%	Strategic management/1 journal	27 years (1980–2006)	1431 articles (1086 empirical)
Molina-Azorin et al. (2012)	68%	21%	11%	Entrepreneur-ship/5 journals	10 years (2000–09)	955 articles (742 empirical)
Cameron et al. (2015)	–	–	1.4%	Project management/3 journals	7 years (2004–10)	1755 articles (25 identified in search)
Venkatesh et al. (2013)	–	–	3%	Information systems/6 journals	7 years (2001–07)	–
Stentz et al. (2012)	77%	9.7%	13.3%	Leadership/1 journal	22 years (1990–2012)	1179 articles (55 articles

						identified in search)
Harrison (2013)	–	–	1.2%	Business/1 journal	20 years (1990–2010)	2072 articles (25 articles identified in search)
Gibson (2016)	–	–	4.5%	Organizational science/4 journals	6 years (2009–2014)	1539 articles

Source: Adapted from Molina-Azorin and Cameron (2015, pp. 471–472)

Table 3 Summary of mixed methods prevalence rate studies in education

Authors	Journals	MMR QUAN QUAL rates
Hutchinson and Lovell (2004)	*Journal of higher education (JHE)* *Review of higher education (R of HE)* *Research in higher education (R in HE)*	MMR 6% QUAL 20% QUAN 74%
Powell et al. (2008)	2001–2005 *Journal of school psychology* *Psychology in the schools* *School psychology quarterly* *School psychology review*	Empirical studies ($n = 438$) MMR 13.7% QUAL 1.3% QUAN 85%
Hart et al. (2009)	1995–2005 *Journal for research in mathematics education (JRME)* *Educational studies in mathematics (ESM)* *Journal of mathematics teacher education (JMTE)* *Elementary school journal (ESJ)* *Early childhood research quarterly (ECRQ)* *American educational research journal (AERJ)*	MMR 29% QUAL 50% QUAN 21%
Truscott et al. (2010)	1995–2005	
	Literacy	MMR 16%
	Journal of literacy research	
	Reading research quarterly	
	Elementary school journal (generalist)	
	Early childhood research quarterly (generalist)	
	American educational research journal (generalist)	
	Mathematics	MMR 14%
	Journal for research in mathematics education	
	Educational studies in mathematics	
	Elementary school journal (generalist)	
	Early childhood research quarterly (generalist)	
	American educational research journal (generalist)	
	Science	MMR 14%
	Journal of research in science teaching	
	International journal of science education	
	Elementary school journal (generalist)	
	Early childhood research quarterly (generalist)	
	American educational research journal (generalist)	

(*continued*)

Table 3 (continued)

Authors	Journals	MMR QUAN QUAL rates
	Social studies	MMR 8%
	Theory and research in social education	
	International journal of social education	
	Elementary school journal (generalist)	
	Early childhood research quarterly (generalist)	
	American educational research journal (generalist)	

Source: Adapted from Cameron (2015)
MMR mixed methods research, *QUAN* quantitative, *QUAL* qualitative

Teaching of Mixed Methods Research to Postgraduate Research Students

This section of the chapter will look at key issues and challenges for teaching mixed methods research to postgraduate students. The Five Ps framework for mixed methods: paradigms, pragmatism, praxis, proficiency, and publishing will be presented and aligned against Bazeley's (2003) learning objectives for the teaching of mixed methods. This allows for the criticisms and challenges facing those using MMR to be aligned with MMR learning objectives and creates a systematic approach to the design of MMR training instruction. This will be followed by a discussion on the concept of "methodological trilingualism."

Cameron (2011b) developed a Five Ps framework based on key challenges and issues identified within the mixed methods research community and aligned these against Bazeley's learning objectives for the teaching of mixed methods research. The Five Ps framework highlights key areas of controversy that those using mixed methods research need to attend to. The first of the Five Ps is paradigms. A common criticism of MMR is the paradigmatic issue especially from those considered paradigmatic purists. Paradigmatic purists argue that paradigms are incommensurable and that any research must be undertaken under the guidelines of the chosen monolithic paradigm. As a counter to this stance, Teddlie and Tashakkori (2010) developed a list of six paradigmatic stances in mixed methods: A-paradigmatic stance; substantive theory paradigm; complimentary strengths stance; multiple paradigms; dialectic stance; and single paradigm stance. The latter includes pragmatism, the name of the second of the Five Ps. As aptly put by Cameron (2011b, p. 101) "Whatever the approach taken, mixed methods researchers need to acknowledge the paradigm debate and rigorously defend their paradigmatic choices/stance."

Pragmatism, the second of the Five Ps, is often associated with mixed methods research (Bazeley 2003; Greene and Caracelli 1997, 2003; Maxcy 2003; Tashakkori and Teddlie 2003; Johnson and Onwuegbuzie 2004). Pragmatism is a very applied

approached to problem solving where mixed method researchers will choose a mix of methods/models that can best answer the research questions posited and to provide practical applied answers. "Pragmatism can be considered a bridge between paradigm and methodology or what Greene and Caracelli (2003) refer to as a particular stance at the interface between philosophy and methodology" (Cameron 2011b, p. 101). A criticism thrown at mixed methods research is that it involves epistemological relativism and short-sighted practicalism so the challenge for mixed methods researchers is to the need to become informed about the key debates and source MMR literature in the chosen field.

The third of the Five Ps is praxis. Praxis is the practical application of theory or theory in practice. The mixed methods researchers need to make informed choices about MMR design, MMR data collection methods, MMR sampling, and MMR data analysis. To do this, they need to become very familiar with the foundations of MMR design and procedures and to become knowledgeable of the use of MMR within their chosen discipline. A common criticism of reported MMR studies is that the "mixing" is done at a very superficial level with little if any reference to the growing body of MMR literature and methodological procedures. Methodological and data integration are key points of interest here.

The fourth P in the Five Ps framework is proficiency, which relates to the need of mixed methods researchers to answer the criticism that there is very little mixing going on in many studies claiming to be mixed methods research and that MM researchers need to be skilled and need to be proficient in both qualitative and quantitative data collection methods. They must also be proficient and competent in mixed methodology which brings us to the concepts of methodological bilingualism and methodological trilingualism. Teddlie and Tashakkori (2003, p. 45) referred to the notion of researchers becoming "methodologically bilingual" or in other words competent and skilled in both qualitative and quantitative research methods. This notion was extended by Cameron (2011a) when she referred to the need for MM researchers to be "methodologically trilingual":

> Not only do they need strong grounding in their chosen quantitative and qualitative methodologies and associated paradigms but they also need to be cognisant, knowledgeable and fluent in the theoretical foundations of mixed methods, the specific mixed method methodological issues (research designs and typologies, mixed methods sampling, data priority, implementation and integration,) and the quality frameworks that have been developed for mixed methods. (Cameron 2011a, pp. 263–4)

The last of the Five Ps is to do with the politics of publishing, and this becomes an issue for researchers when they are nearing the end of their research training and are wanting to have their research published. Table 4 displays the key points contained within the Five Ps framework and aligns these with Bazeley's (2003) learning objectives for teaching mixed methods research. Again the MMR prevalence rate studies can be a useful guide.

As a logical and practical extension of this section of the chapter, the following section presents suggested curriculum for the teaching of MMR in higher education for postgraduate research students. Although the teaching of mixed methods in

Table 4 The Five Ps of mixed methods research (MMR)

Five Ps	Issues and challenges	Bazeley's (2003) learning objectives
Paradigms	*Criticism:* From paradigmatic purists and claims of eclecticism. *Challenge:* Need to document and argue paradigmatic stance in MMR.	Have sufficient understanding of the philosophical bases of research to determine if and how apparent paradigmatic differences in approach might influence their work and be resolved.
Pragmatism	*Criticism:* Epistemological relativism and short-sighted practicalism. *Challenge:* Become informed about the key debates and source MMR literature in the chosen field. Rigorously defend the stance and choices made at the interface between philosophy and methods.	Be familiar with key literature and debates in mixed methods, and with exemplars of a variety of mixed methods approaches to research. Learn to take risks, but also to justify choices made.
Praxis	*Criticism:* Problems related to methodological and data integration. *Challenge:* Informed choices, utilization and application of MMR designs, methods, and data analysis.	Be able to determine the appropriateness of a selected method or methods, based on the question (s) being asked (be question-driven in their choice of methods), and be able to determine whether mixing methods provides a cost-effective advantage over use of a single method; have knowledge of the variety, rules, and implications of different sampling methods, and of alternative approaches to dealing with "error" or deviance from the norm. Be prepared to recognize and admit what is not known, and seek advice.
Proficiency	*Criticism:* Superficial claims of utilizing MM and the need to be proficient in both QUAL and QUANT methods. *Challenge:* Become skilled and competent in both chosen QUAL and QUANT methods and data analysis, as well as skilled and competent in mixed methods and integrated data analysis.	Have well-developed skills in carrying out research using at least one major methodological approach, but also a comprehensive understanding of a range of approaches and methods (if they did not already), particularly to understand the principles underlying those methods. Have an ability to interpret data meaningfully, and to ask questions of the data, rather than to simply follow a formula. Know and understand how software can be used to assist analysis tasks.

(*continued*)

Table 4 (continued)

Five Ps	Issues and challenges	Bazeley's (2003) learning objectives
Publishing	*Issues and challenges:* Political nature of reporting and publishing MMR in academic and discipline based literature such as: Disciplinary traditions; levels of acceptance of MMR within disciplines; and reporting MMR in its entirety given word length limitations.	Develop new ways of thinking about the presentation of research results, especially where the methods used and information gained do not neatly fit a conventional format.

Source: Cameron (2011, pp. 97–98)

higher education is a rarity, it does exist in certain institutions in the USA (University of Alabama and University of Hawaii) and the UK (University of Warwick and University of Birmingham). Many are offered by institutions of higher education, but they are not at postgraduate level but are offered as continuing education courses. For examples, refer to *Mixed Methods on Health Research* (Course code: 015C212B9Y), Department for Continuing Education, University of Oxford, UK, and *Web-Based Certificate Program in Mixed Methods Research*, School of Social Work, University of Michigan, USA.

Proposed Core Curriculum for Postgraduate MMR Courses

Several mixed methodologist have written about the issues related to the teaching of mixed methods research (Bazeley 2003; Baran 2010; Collins 2010; Leech and Onwuegbuzie 2010; Mertens 2010; Niglas 2009; Robinson 2010). Plowright (2013) surveyed postgraduate students ($n = 118$) from two UK universities followed by focus groups with the doctoral students during a weekend doctoral workshop at one of the two universities. The study found is confusion among postgraduate students as to the "underlying methodological and philosophical principles associated with carrying out research in general and mixed methods research in particular. One source of the confusion might be the continuing use of the qualitative/quantitative distinction" (p. 66). Christ (2010) recommends reconceptualizing research beyond the simplistic dualism this creates and suggests; "perhaps it is now time for mixed methods research to develop a more mature independence and grow into an integrated methodology that is not hidebound by a reliance on a traditional polarization of qualitative and quantitative research paradigms?" (p. 81).

Christ (2010) wrote about teaching mixed methods and action research at three levels: pedagogically, practically, and in terms of evaluative issues. His chapter in the second edition of the *Handbook of Mixed Methods Research* discusses the development over 2 years of a course (EDCS 780 Mixed Methods), an advanced research offering for PhDs at the University of Hawaii. A nine step approach to conducting MMR is utilized in this course:

1. Defining the Topic
2. Mental model for mixing
3. The design typologies
4. Specifying the reason, rationale and purpose for conducting MMR
5. Determining, defining and modifying the research questions
6. Selecting a mixed methods research design
7. Determining sampling strategies
8. Collecting and analysing data
9. Legitimating inferences and formulating generalizations

These nine steps are spread across a 16 topic curriculum, and Christ (2010- refer to pp. 658–660) documents the texts and readings for each of these 16 topics.

Ivankova (2010) provides a very detailed description of a doctoral level course in mixed methods offered annually at the University of Alabama in the USA (*Mixed Methods Approaches to Educational Research*) in the Department of Human Studies. Similar to the course described by Christ (2010), the course is made up of 16 topics taught across 16 weeks. These two courses are compared in Table 5.

Conclusion

The notion of becoming methodologically trilingual refers to having an understanding of not only quantitative and qualitative methodologies but also mixed methods research, the third methodological movement, hence the need to teach mixed methods research to postgraduate students. This chapter has attempted to provide an overview of mixed methods as the third research methodological movement. Mixed methods prevalence rate studies were introduced and summarized from across business and management disciplines and fields of inquiry from within the broader education discipline. Prevalence rate studies have the dual purpose of allowing researchers to determine the acceptance levels of MMR within their respective fields and thereby providing examples of published MMR studies in their discipline and to gauge the acceptance of MMR studies with particular journals. The latter is an issue highlighted with the fifth P of the Five Ps framework, politics of publishing. Key issues and challenges for those undertaking MMR was discussed using the Five Ps framework and these were aligned against Bazeley's (2003) learning objectives for the teaching of MMR. This was followed by a detailed discussion of the curriculum for the teaching of MMR in higher education from two courses designed for doctoral students, both from the USA.

To conclude, this chapter has argued for the teaching of MMR in postgraduate research education and training to enable novice researchers to become "methodologically trilingual" and for a means by which the divide between teaching quantitative and qualitative research methods can be bridged. Postgraduate research training and the professional development of more established researchers and supervisors need to include and encompass the third methodological movement, MMR. Universities "will need to acknowledge the growing imperatives for mixed

Table 5 Comparative of two doctoral level mixed methods courses

Topic #	Topics (Christ 2010)	Written responses	Topics (Ivankova 2010)	Application
1	Intro to MMR	*Research topic*	Intro to MMR	–
2	Discipline of MM pragmatism and qualitative research	*Reflection*	Understanding MMR	–
3	MM traditions: Exploratory Explanatory Confirmatory Transformative	*Topical paragraph Diagram design What part QUAN? What part QUAL?*	History of MMR	*Describe the proposed research project – project outline*
4	Paradigm and pragmatism	*Strengths and weaknesses of pragmatism*	Philosophy of MMR	*Apply philosophical assumptions to the class project*
5	Visual representations and problem statement	*Write and diagram topic: exploratory, confirmatory, action*	Purposes of MMR	*Write research problem statement for class project*
6	Supporting literature purpose statement Research questions	*Purpose statement and RQs*	Types of MM designs	*Describe the class project study deign*
7	Types of MM designs Sampling	*Present diagram in class*	MM purpose statement and research questions	*Write the purpose statement and RQs for class project*
8	Data analysis	*Specify in detail data collection*	Sampling in MMR	*Describe sampling procedures for class project*
9	Quality, credibility, validity, and research design	*Define MM design and data analysis*	MM data collection	*Describe data collection procedures for class project*
10	Participant selection and data collection	*Specify forms of credibility/validity*	MM data analysis	*Describe data analysis procedures for class project*
11	Qualitative coding techniques Critical realism	*Computer coding exercise NVIVO*	Mixing/ integrating in MMR	*Describe mixing/ integration procedures for class project*
12	Theory, inferences, and validity issues	*Theory (three levels) and worldview*	Drawing visual diagram of MM procedures	*Draw a visual diagram of MM procedures for class project*

(*continued*)

Table 5 (continued)

Topic #	Topics (Christ 2010)	Written responses	Topics (Ivankova 2010)	Application
13	Formatting the proposal	*Prob, purpose, RQ, methods. Procedures, and analysis sections*	Validity/ legitimation in MMR	*Describe validity/ legitimation procedures for class project*
14	Final write-up to triad	*Triad peer review*	Reporting and evaluating MMR	*Describe the reporting structure for class project*
15	Final due	*Proposal and map*	Future of MMR	–
16	Presentations	*Final paper due*	Study design proposal evaluations	*Evaluating MM design proposals*

Sources: Adapted from Christ (2010) and Ivankova (2010)
Computer-assisted data analysis in MMR is something which does not appear to be covered in these courses at first glance. For greater detail on this refer to contributions in the Special Issue on *Computer Assisted Multiple and Blended Research* in the *International Journal of Multiple Research Approaches* (Vol. 2 Issue 1, 2008)

methods research training and capacity building through the introduction of workshops, seminars, special interest groups and courses in mixed methods" (Cameron 2011a, p.).

References

Baran, M. 2010. Teaching multi-methodology research courses to doctoral students. International Journal of Multiple Research Approaches 4 (1): 19–27. https://doi.org/10.5172/mra.2010.4.1.019.
Bazeley, P. 2003. Teaching mixed methods. *Qualitative Research Journal* 3: 117–126.
Cameron, R. 2010a. Mixed methods in VET research: Usage and quality. *International Journal of Training Research* 8: 25–39.
Cameron, R. 2010b. Is mixed methods used in Australian career development research. *Australian Journal of Career Development* 19: 53–67.
Cameron, R. 2011a. Mixed methods in business and management: A call to the 'first generation'. *Journal of Management & Organisation* 17 (2): 264. ISSN: 1833367213243209.
Cameron, R. 2011b. Mixed methods research: The five Ps framework. *Electronic Journal of Business Research Methods* 9 (2): 96–108. ISSN: 1477–7029.
Cameron, R. 2015. Chapter 8. The emerging use of mixed methods in educational research. In *Meanings and motivation in educational research*, ed. M. Baguley, Y. Findlay, and M. Kerby, 103–115. Oxon: Routledge. ISBN: 978-1-138-81027-3.
Cameron, R., S. Sankaran, and G. Scales. 2015. Mixed methods use in project management research. *Project Management Journal* 46 (2): 90–104.
Christ, T.W. 2010. Chapter 25. Teaching mixed methods and action research: Pedagogical, practical and evaluative considerations. In *Sage handbook of mixed methods in social & behavioral research*, ed. A. Tashakkori and C. Teddlie, 643–666. Thousand Oaks: Sage.

Collins, K.M.T. 2010. Introduction: Crafting significant learning experiences in the context of teaching mixed methodologies. International Journal of Multiple Research Approaches 4 (1): 6–8. https://doi.org/10.5172/mra.2010.4.1.006.

Gibson, C.B. 2016. Elaboration, generalization, triangulation, and interpretation: On enhancing the value of mixed method research. *Organizational Research Methods* 20: 1–31. https://doi.org/10.1177/1094428116639133.

Greene, J., and V. Caracelli, eds. 1997. *Advances in mixed-method evaluation: The challenges and benefits of integrating diverse paradigms*. San Francisco: Jossey-Bass.

Greene, J., and V. Caracelli. 2003. Making paradigmatic sense of mixed methods inquiry. In *Handbook of mixed methods in social & behavioral research*, ed. A. Tashakkori and C. Teddlie. Thousand Oaks: Sage.

Grimmer, M., and D. Hanson. 2009. Qualitative and quantitative research published in the *International Journal of Human Resource Management*, 1998–2007. Paper presented at the annual meeting of the Australian and New Zealand Academy of Management (ANZAM), Melbourne.

Hanson, D., and M. Grimmer. 2007. The mix of qualitative and quantitative research in major marketing journals, 1993–2002. *European Journal of Marketing* 41: 58–70.

Harrison, R.L., III. 2013. Using mixed methods designs in the *Journal of Business Research*, 1990–2010. *Journal of Business Research* 66 (11): 2153–2162.

Harrison, R.L., and T.M. Reilly. 2011. Mixed methods designs in marketing research. *Qualitative Market Research: An International Journal* 14 (1): 7–26.

Hart, L., S. Smith, S. Swars, and M. Smith. 2009. An examination of research methods in mathematics education (1995–2005). *Journal of Mixed Methods Research* 3: 26–41.

Hurmerinta-Peltomaki, L., and N. Nummela. 2006. Mixed methods in international business research: A value-added perspective. *Management International Review* 46 (4): 439–459.

Hutchinson, S.R., and C.D. Lovell. 2004. A review of methodological characteristics of research published in key journals in higher education: Implications for graduate research teaching. *Research in Higher Education* 45: 383–403.

Ivankova, N. 2010. Teaching and learning mixed methods research in computer-mediated environment: Educational gains and challenges. *International Journal of Multiple Research Approaches* 4 (1): 49–45.

Johnson, R.B., and A.J. Onwuegbuzie. 2004. Mixed methods research: A research paradigm whose time has come. *Educational Researchers* 33 (7): 14–26.

Johnson, R.B., A.J. Onwuegbuzie, and L.A. Turner. 2007. Towards a definition of mixed methods research. *Journal of Mixed Methods Research* 1 (2): 112–133.

Leech, N.L., and Onwuegbuzie, A.J. 2010. Epilogue: The journey: From where we started to where we hope to go. International Journal of Multiple Research Approaches 4 (1): 73–88. https://doi.org/10.5172/mra.2010.4.1.073.

Maxcy, S. 2003. Pragmatic threads in mixed methods research in the social sciences: The search for multiple modes of inquiry and the end of the philosophy of formalism. In *Handbook of mixed methods in social & behavioral research*, ed. A. Tashakkori and C. Teddlie. Thousand Oaks: Sage.

Mertens, D.M. 2010. Philosophy in mixed methods teaching: The transformative paradigm as illustration. International Journal of Multiple Research Approaches 4 (1): 9–18. https://doi.org/10.5172/mra.2010.4.1.009.

Miller, P., and R. Cameron. 2011. Mixed method research designs: A case study of their adoption in a doctor of business administration program. *International Journal of Multiple Research Approaches* 5: 387–402.

Molina-Azorin, J.F. 2008. Mixed methods research in business management: A comparison of the use of mixed methods in three specific areas. Paper presented at the IV Mixed Methods Conference, Cambridge, UK.

Molina-Azorin, J.F. 2011. The use and added value of mixed methods in management research. *Journal of Mixed Methods Research* 5: 7–24.

Molina-Azorin, J.F. 2012. Mixed methods research in strategic management: Impact and applications. *Organizational Research Methods* 15: 33–56.

Molina-Azorín, J.F., and R. Cameron. 2010. The application of mixed methods in organisational research: A literature review. *Electronic Journal of Business Research Methods* 8: 95–105.

Molina-Azorin, J., and R. Cameron. 2015. Chapter 26. History and emergent practices of multimethods and mixed methods in business research. In *The Oxford handbook of multimethod and mixed methods research inquiry*, ed. Sharlene Hesse-Biber and Burke Johnson, 466–485. New York: Oxford University Press.

Molina-Azorin, J.F., M.D. López-Gamero, J. Pereira-Moliner, and E. Pertusa-Ortega. 2012. Mixed methods studies in entrepreneurship research: Applications and contributions. *Entrepreneurship & Regional Development* 24: 425–456.

Niglas, K. 2009. How the novice researcher can make sense of mixed methods designs. International Journal of Multiple Research Approaches 3 (1): 34–46.

Plowright, D. 2013. To what extent do postgraduate students understand the principles of mixed methods in educational research? *International Journal of Multiple Research Approaches* 7 (1): 66–82.

Powell, H., S. Mihalas, A. Onwuegbuzie, S. Suldo, and C. Daley. 2008. Mixed methods in school psychology: A mixed methods investigation of trends in the literature. *Psychology in the Schools* 45 (4): 291–309.

Robinson, P. 2010. CONCLUSION: On hammers, nails and building sites – Teaching mixed methods. International Journal of Multiple Research Approaches 4 (1): 66–72. https://doi.org/10.5172/mra.2010.4.1.066.

Stentz, J.E., V.L. Plano Clark, and G.S. Matkin. 2012. Applying mixed methods to leadership research: A review of current practices. *The Leadership Quarterly* 23 (6): 1173–1183.

Tashakkori, A., and C. Teddlie, eds. 2003. *Handbook of mixed methods in social & behavioral research*. Thousand Oaks: Sage.

Teddlie, C., and A. Tashakkori. 2010. Overview of contemporary issues in mixed methods research. In *Sage handbook of mixed methods in social & behavioral research*, ed. A. Tashakkori and C. Teddlie, 1–41. Thousand Oaks: Sage.

Truscott, D., S. Swars, S. Smith, F. Thornton-Reid, Y. Zhao, and C. Dooley. 2010. A cross-disciplinary examination of the prevalence of mixed methods in educational research: 1995–2005. *International Journal of Social Research Methodology* 12 (4): 1–12.

Venkatesh, V., S. Brown, and H. Bala. 2013. Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly* 37: 21–54.

The Doctoral Studies Paradox: Indigenous Cultural Paradigms Versus Western-Based Research Practices

31

Fernando F. Padró

Contents

Abstract

This is an exploratory conceptual chapter regarding the ontological and epistemological premises that are present in the enrollment of Indigenous peoples in doctoral programs at higher education institutions (HEIs). The paradoxical nature of navigating through distinct points-of-view about two distinct cultural perspectives, that of the doctorate representing a culminating recognition of a professional culture based on Western tradition and the norms and values of Indigenous cultures. There are personal risks involved in undergoing an education predicated on conflicting messages paradoxes represent from prior personal and collective experience and from institutional dicta and expectations. This chapter looks at how an individual brings these elements together in a transformative manner that accepts or rejects governmental preference for enhanced participation by Indigenous peoples in doctoral education programs.

Keywords

Hybridity · Indigenous doctoral students · Paradox · Risk

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Introduction

According to Wergin and Alexandre (2016), successful academic organizations exhibit the ability to balance paradoxes. Perceptual in nature and reference dependent (Kahneman 2003), the presence of a paradox describes a situation where contradictions (often in the guise of mixed messages), conflicting demands or opposing perspectives are simultaneously present (Lewis and Dehler 2000). To cope with the presence of paradoxes, "[as] people attempt to make sense of an increasingly complicated, ambiguous, and ever-changing world, they frequently simplify reality into polarized, either/or distinctions that conceal complex interrelationships" (Lewis and Dehler 2000, p. 710). Choices, especially difficult choices between competing values therefore represent value judgments. The complication here is what Arrow (1963) noted regarding the consistency or contradictory nature of the value judgment in relation to social interests and individual experienced utility (Kahneman et al. 1997). Choices within a paradoxical circumstance, particularly in a HEI environment, are based on (1) "figuring out how to accomplish conflicting purposes, without choosing among them" (Wergin and Alexandre 2016, p. 231) and (2) be able to explain personal or collective actions in a manner that is describable, systematic, and nonrandom (Argyris 1996). Yet, as the Allais Paradox (Allais 1953) points out, choices do not always reflect rational choices, i.e., judgments and choices are based on individual value complexes in relation to the extracted cues from the surrounding environment.

Pursuing a Doctoral Degree at HEIs

Pursuit of a doctoral degree tends to be a highly personal and unique set of events (Lahenius and Martinuso 2011). Personal motivation, prior educational, social, and vocational experiences shape how a student understands the process. Shaping experiences are:

- **An intrapsychic sensemaking process based** (based on personal expectations shaping motivation and purpose influenced by cultural values, family, and social interactions in and out of educational settings).
- **Program design and approach to supervision** (construction of or lack of formal curriculum dependent on the doctoral model available to the individual wanting a doctoral degree, approaches to supervision by program and individual academics).
- **Disciplinary and institutional expectations and requirements** (formal and informal graduate attributes).
- **The implicit, tacit, or hidden "curriculum"** that drives the key processes in the doctoral education process.
- **The motivation of doctoral supervisors** in motivation and reason(s) for wanting to work with the student.
- **Sociocultural expectations shaping the value** surrounding the worth of acquiring the degree and what the doctoral degree represents.

- **The ability to overcome financial, personal, professional challenges** inherent in the sacrifices involved in the pursuit of a doctoral degree.
- **How the individual is able to create personal meaning** as a result of bringing these elements together into a meaningful proposition.

Success, as a result, is often associated as a matter of fit (Hawley 2010). As Hawley pointed out, completing a doctoral degree is more than just being bright enough, there is a major emotional component to it. One reason for this is that successful completion is a culmination of a transformational process wherein the student becomes acculturated into and accepted within a professional community. A doctoral degree reflects a professional identity (Hershey 2007), a specific manner of perceiving, thinking, and feeling about an issue and how to approach it (Schein 1985). There is a degree of risk associated in successfully navigating through the doctoral process. Sensemaking becomes pivotal, because it helps the doctoral student identify and understand those reference points (often being or framed by institutional rules, symbols, and values) that help, hinder, challenge, or support as he or she traverses the various tasks leading to completion and recognition (Bruner 1990; Weick 1995; Zhang n.d.). Individuals react to what they infer from their perceptions of valuation and valuing of circumstances based on the proposition that "the properties of things are not shuffled and combined at random in nature, but ... that there is constancy of association" (Knight 1964/1921). The outcomes associated with identified (either consciously or subconsciously) reference points – considerations that trigger a decision – are framed by the norms, habits, and expectations of, in this case, the doctoral student (Kahneman and Tversky 1979; Tversky and Kahneman 1981, 1986).

The extent of personalization in the doctoral experience leads to a higher degree of uncertainty, making risk aversion or risk-taking a recognizable part of decision-making, arguably on the part of the student AND the supervisor. Uncertainty comes from not being versed in the tasks expected of them (Trudgett 2014). Uncertainty therefore often acts as a deterrent to those making a commitment to a doctoral program as well as more generally career decisions (Friedman and Savage 1948). A key element here being the emotional state of regret, attempting to minimize it either before or after decisions are made (Zeelenberg et al. 1996). The critical nature of regret is underscored by Lusted's definition of doctoral studies as a pedagogical process based on production and exchange (Lusted 1986). Perceptions of environments and experienced utility and the cognitive processes linked to what is perceived tends to steer notions of regret impacting decision-making choices, especially as the process is becoming a doctor is intellectually and procedurally different from prior educational experiences. The approach is more entrepreneurial, emphasizing self-management (Hawley 2010) in contrast to the previous educational methods based on discovery through a highly scaffolded and defined environment represented by the designed curriculum. The lived experience comes from a reverse perspective of being an active knowledge creator. The question "*is it worth it?*", as a result, is what drives persistence toward completion.

Potentially, the capacity for regret about decisions is enhanced because production and exchange occurs in interactions having "frontier effects" between the symbolic boundaries of self-identity and disciplinary/university expectations and requirements in the construction of new learning by the doctoral student (Foucault 2005/1982; Hall 1996). Typical identified factors in the literature influencing completion or non-completion include:

- **Supervision** (a key concern widely discussed in the literature)
- **Program and/or discipline rigidity** (institutional lack of ability or unwillingness to adapt to extraordinary situations due to internal policies or accreditation or recognition schemes)
- **Financial support**
- **Support from peers** (the ability to generate own or inability to enter into peer communities of practice within and/or outside the HEI)
- **Support from employer and/or student's own resource capacity** (e.g., access to needed means to achieve a desired/needed outcome, organization and balancing of disparate demands between educational and noneducational activities, time, transportation) (Lahenius and Martinuso 2011; Wisker and Robinson 2014)

However, for traditionally underrepresented groups, there are additional influencers:

- **Diminished academic preparation**
- **Ill-health**
- **Multiple family and community responsibilities**
- **Organizational dynamics**
  - Lack of academic staff from similar background (i.e., lack of role models)
  - Institutional and individual academic staff preference for upholding traditional Western tradition and values pertaining to research, research methodologies, research questions, supervisor/supervisee relations, and values
  - Limiting the doctoral process to a project management model emphasizing rules and procedures more than the knowledge creation aspects of research and its manyfold implications discovery represents
  - Lack of recognition of cultural differences that make it difficult for the institution to fully accept, value, and support culturally diverse perspectives and practices
- **Lack of appropriate pastoral care or, if available, informal support is "invisible"** (Behrendt et al. 2012; Lee and Green 2009; Manathunga 2015; McKinley et al. 2011; Pearson 1999; Pechenkina et al. 2011; Schofield et al. 2013; Trudget et al. 2016; Trudgett 2011; Wisker and Robinson 2014)

There are inherent paradoxes within these persistence factors. At play are the conundrums these represent and how individual values based on prior socio-psychological shape student responses, usually in favor of risk aversion. Sometimes the choices may not seem to make sense because the decisions have a more intrinsic value to the student that contradicts institutional or other third party perspectives.

Understanding and accommodating (within plausible limits) these alternative realities may counter some of these influencers. What is important here is a willingness to identify the issues and a capacity and desire to negotiate an environment that is acceptable to the doctoral student, supervisor(s), HEI, and other stakeholders (e.g., accreditors, employers or potential employers, communities, community leaders, government agencies, regulatory agencies).

The Conundrum: Engaging Indigenous Populations in Doctoral Level Education and Research

Poor performances in higher education by Indigenous groups have led to a range of initiatives by the Australian Government as of 2005 to improve access, participation, and success in attaining university qualifications (Bradley et al. 2008). In 2012, Behrendt et al. (2012) recommended that the Australian Higher Education sector should aim to increase the total of domestic student doctoral completions for Indigenous Australians to at least 2.2% of the total population to increase overall national research capacity, as the total population of Indigenous Australians aged 15–64 reached the 2.2% level in 2007 (Larkin et al. 2010). Behrendt et al.'s report indicated Indigenous students made up only 1.1% of higher degree by research (HDR – honors, masters, and doctoral degrees) students and 0.8% of all HDR completions in 2010. If there is such a thing as good news for this situation, the retention rate for Indigenous students was slightly lower compared to non-Indigenous students; yet, the overall attrition rate for Indigenous students in higher education has been as high as 56% while 12% of those eligible to enroll in any year actually do so (Larkin et al. 2011). While not directly applicable to doctoral studies, institutional outcomes of success for Indigenous students tend to fall into two categories: high enrollment-low completions or low enrollment-high completions (Pechenkina et al. 2011). Doctoral by research completions by Indigenous Australians ranged from a low of 8 in 2001 to a high of 37 in 2011 (Trudget et al. 2016). In terms of percent of completions, the percentage rate ranged from a low of 0.21% in 2002 to a high of 0.81% in 2011, averaging 0.48% during the 2002–2014 period.

While a number of the references cited talk about national interest and a discussion on generating strategies to increase access and participation, the question remains what are barriers to Indigenous engagement, especially at the masters and doctoral degree levels given that participation numbers remains under what parity figures suggest they should be (near the 2.2% level). The following two quotes provide an answer:

> Aboriginal knowledge has always been informed by research, the purposeful gathering of information and the thoughtful distillation of meaning. Research acquired a bad name among Aboriginal Peoples because the purposes and meanings associated with its practice by academics and government agents were usually alien to the people themselves and the outcomes were, as often as not, misguided and harmful. (Castellano 2004)

> Research is not a word taken lightly by Aboriginal peoples. Depending on the audience, it is a word that has varying contextual and historical significance. Research is a Western world term: for Aboriginal peoples it has meant centuries of violation, disrespect, subjectivism, and intolerance, all in the name of research. (Pidgeon and Hardy Cox 2002)

These two quotes refer primarily to the perceived negative lived experience of Indigenous communities and their individual members as linked to experienced utility. The multiplicity of experiences felt by Indigenous communities – and not just in Australia, but in Canada, New Zealand, the USA, and other countries with identifiable Indigenous populations – based on how Western processes interacted with or imposed on these communities, how these complemented or alienated existing beliefs, practices, and social structures – have created a situation of at minimum discomfort to outright alienation that help shape individual identity (Lefebvre 1991/1974) that, in this case, needs to be overcome. Effectively, there is a cultural clash in place that requires the individual to potentially make choices because of the paradox generated between the potential benefits that doctoral education research provides as a seed or complement to other community-based research versus the negative experiences had by the community in general and possibly the potential student directly. This is compounded by the realities that these possible future doctoral students will in all probability be first-in-family and come from a background that education is not valued (apologies for the tautology). At the crux of the matter is Wergin and Alexandre's missive of accomplishing conflicting purposes without selecting between them.

Lefebvre (1991/1974) talks about lived experience from a concrete (bodily, spatial) perspective, with individuals having to experience as a means of having perceptions that lead to conception. He treats lived experience as distinct from the perceived and the "thought." For him, there is an interconnection between the three, and it is this intersection where it can be argued that the navigation of paradoxes occurs as part of a self-learning proposition. Conception can overcome the lived experience. There is both a chance to meet the challenge of increasing Indigenous participation in doctoral education programs and, conversely, becoming a risk proposition if the negative perceptions emanating from the lived experience support the cognitive stereotype of Western research's impact on Indigenous culture and knowledge.

Superficially, the distinction between the Western tradition of doing research and doctoral education and Indigenous cultures has argument lines echoing C.P. Snow's "Two Cultures" (Snow 1998/1959). However, rather than discussing the irresolute divide between the two, there is a third, in-between space where the chance to succeed converges with the risk proposition of irrelevance based on the adverse impact many Indigenous populations have felt in the name of research to benefit them. It is where self-identity and learning come together to stimulate change. Bhabha (1994) terms the identification process "hybridity" where renewal is based on iteration and translation where the different meanings from the two cultures are vicariously addressed. The result is the individual's ability to generate his or her own transformation of meaning and prioritization of contingent and strategic elements that shape values and drive decisions, whether these are rational or based on other affective premises. In other words, this third space is where the boundaries of

personal and social constructs come together to create an understanding of self (being and becoming). The tacit (usually not verbalized or difficult to express, with inferences drawn from clues that are not explicit (Polanyi 1965; Wagner and Sternberg 1985)) and the explicit interact within the formal (external environmental contexts) and personal (contextual (Polanyi 1958)) to achieve this understanding (Polanyi 1966). How this comes to pass is based on conscious choices, stumbling on them, or simply having grown-up in them through an inductive process of observed actions and reactions (Heidegger 2008/1927; Ryle 2009/1949).

Strategies for Increasing Indigenous Doctoral Student Numbers

A scan of the literature identifies the following areas for where changes/improvement needs to happen:

- Supervision (Grant and McKinley 2011; Manathunga 2015; Trudgett 2014)
- Enhancing cultural awareness within HEIs regarding Indigenous cultures, their knowledge and values (Behrendt et al. 2012; Larkin et al. 2011)
- Increasing the number of Indigenous academic staff who qualify to act as supervisors (Cross et al. 2009; Larkin et al. 2010; Trudget et al. 2016)
- Revisiting the approaches to doctoral pedagogy and the models for approaching doctoral level research and dissertations (Lahenius and Martinuso 2011; Pearson 1999)
- Expanding the acceptance of Indigenous cultural values in shaping the standard of practice in doctoral research methodologies (Manathunga 2015; Wisker and Robinson 2014)

Probably the most critical of these areas is supervision. Supervisor guidance provides the student a salve to counter the identified pitfalls (Pyhältö et al. 2012). Implicit in the supervisory process should be a pastoral relationship based on trust and respect (Manathunga 2015). Supervisors represent the disciplinary expectations and the institutional requirements for a successful graduate to the student. Specifically, the HEI designates the supervisor as the quality control mechanism to ensure successful completion. This creates a double role for the supervisor of needing to be the chief advocate, agent, and supporter while being the chief critic and gatekeeper. This is not the same as the supervisor being judge and jury, especially in terms of access and willingness to work with the student, preferably alongside in a negotiated environment. What is at play is a sympathetic Janusian role of backing the student up while making the doctoral student accountable to ensure the he or she can do the best work possible. Put in another way, the supervisor represents the existential paradox of becoming a doctor.

Supervising higher degree students has many tacit elements to the process. This is even more so in the case in doctoral level studies. Supervision tends to be experiential based on recollected experiences of when the supervisor was a student or previous supervision experience. There is no real codification of practice based on the required personalization to generate unique research projects. Nonetheless, what

is effectively supervisor pedagogy reflects the everyday practices of the HEI's culture (Grant and McKinley 2011; Pyhältö et al. 2012). Formality comes in terms of norms representing expected attributes of doctoral degree graduates and disciplinary and professional expectations – dispositional and technical – that graduates need to exhibit and meet and enforced through procedures such as ethics protocols, timelines, and defined milestones.

Supervision provides two areas of potential challenges to the doctoral student in relation to interactions with the formal and informal HEI culture regarding doctoral education. One area is in achieving acceptance of the methodologies used. Depending on the doctoral model utilized by an HEI, this occurs either through a confirmation process within the university, a preliminary proposal meeting with doctoral committee members, possibly the ethics panel, and potentially the HEI graduate studies/research office. Here issues of cultural awareness and acceptance are critical. There are the typical research paradigm wars that disciplines have within themselves or extend across the institution in the traditional internecine rivalry between the natural and social sciences, humanities, and professional programs. Acceptance of a different approach, focus, methodology, or paradigm based on cultural awareness and sensibilities thus becomes a negotiated affair requiring the supervisor to advocate for the Indigenous student to achieve acceptance and recognition that their work will meet the rigors expected of this level of research. The supervisor should facilitate the student's capacity to ground the research based on his or her own cultural knowledge systems (Henry 2007). A second area generating challenges for the supervisor is the extent to which the supervisor views the doctoral research project in terms of project management (Manathunga 2015). The question is one of emphasis, based on whether to focus on the procedural and research aspects of the thesis over the qualitative elements of the thesis as a transformative experience (Green 2009). There is often a gap between the students' understanding about what research is and HEI expectations that acts as a barrier to the successful completion of the degree (McCormack 2004). This leads to a third area, personal motivation for a supervisor in taking on board a doctoral student. Is it opportunity for recognition and promotion or to foster pragmatic benefits emanating from the relationship such as a favourable work environment (Zhao et al. 2007)? Motivation sits alongside a fourth area of concern, that of qualified Indigenous academic staff that can act as mentors and supervisors. In 2009, there were 321 Indigenous academic staff in research only, teaching only, or combined teaching and research positions; parity numbers indicate that the total number of academic staff should have been 1180 (Larkin et al. 2011). In 2009, there were 321 Indigenous academic staff in research only, teaching only, or combined teaching and research positions; parity numbers indicate that the total number of academic staff should have been 1160. In short, universities are majorly understaffed when it comes to having the number Indigenous academic staff by 73.3%. Not surprising, a recent study found that in their sample group, Indigenous staff providing doctoral supervision had on average 20 years of experience doing it (Trudget et al. 2016). Nevertheless, strategies are needed to promote success and foster career progression of Indigenous academic staff who are interested in pursuing doctoral degrees (Behrendt et al. 2012; Larkin et al. 2011; Trudget et al. 2016).

Conclusion

Upon completion, completers of doctoral degrees are expected to exhibit characteristics of a practicing professional:

- Specialized knowledge, expertise, and professional language
- Shared standards of practice
- Long and rigorous processes of training and qualification
- A monopoly over services provided
- An ethic of service in relation to clients
- Self-regulation of conduct, discipline, and dismissals
- Autonomy to make discretionary judgments
- The capacity to work together with other professionals to solve complex issues or problems
- A commitment to continuous learning and professional upgrading (Hargreaves and Fullan 2012)

There is a major personal transformation that takes place that requires commitment, persistence, and the belief that there is at minimum a personal payoff and, preferably, a vocational one. The personal nature of the experience highlights the interplay between personal sensibilities shaped by prior experiences and social, disciplinary, and HEI expectations cum requirements that frame the pursuit of a doctoral degree. The list represents the Western tradition of benefit that is widely accepted. But this is not the case with Indigenous peoples as they see negative results emanating from these types of activities. In turn, this adverse view of what higher education sponsored and/or research adds to the task of getting more Indigenous higher degree students, especially at the doctoral level. The focus of this chapter has been the individual rather than the community. For Indigenous peoples, the community is critical and thus it needs to be a separate discussion given space limitations. However, the individual as locus of discussion is important because of how a potential doctoral student brings together those experiences that shaped him or her and those external expectations and requirements to create that self-identity that generates meaning, identifies and manages perceived risks, and prioritizes values. Understanding this transformation helps to appreciate the challenges faced by governments and societies to engage Indigenous populations in educational settings as a means of increasing the individual and community quality of life.

References

Allais, M. 1953. Le Comportement de l'Homme Rationnel Devant le Risque: Critique des Postulats et Axiomes de l'Ecole Americaine. *Econometrica* 21 (4): 503–546.

Argyris, C. 1996. *On organizational learning*. Oxford: Basil Blackwell.

Arrow, K. 1963. *Social choice and individual values 2e*. New York: Wiley.

Behrendt, L., S. Larkin, R. Griew, and P. Kelly. 2012. *Review of higher education access and outcomes for aboriginal and Torres Strait Islander people*. Canberra: Department of Education & Training.

Bhabha, H.K. 1994. *The location of culture*. London: Routledge.
Bradley, D., et al. 2008. *Review of Australian higher education: Final report*. Canberra: Department of Education, Employment and Workplace Relations.
Bruner, J. 1990. *Acts of meaning*. Boston: Harvard University Press.
Castellano, M.B. 2004. Ethics of aboriginal research. *Journal of Aboriginal Health* 1 (1): 98.
Cross, S.L., et al. 2009. Task force on native Americans in social work education final report: Status of native Americans in social work higher education. Alexandria: Council on Social Work Education. Retrieved from http://www.cswe.org/File.aspx?id=55342.
Foucault, M. 2005/1982. *The hermeneutics of the subject: Lectures at the college de France 1981–1982*. Trans. Ed. F. Gros and G. Burchell. New York: Picador.
Friedman, M., and L.J. Savage. 1948. The utility analysis of choices involving risk. *The Journal of Political Economy* 56 (4): 279–304.
Grant, B., and E. McKinley. 2011. Colouring the pedagogy of doctoral supervision: Considering supervisor, student and knowledge through the lens of indigeneity. *Innovations in Education and Teaching International* 48 (4): 377–386.
Green, B. 2009. Addressing the curriculum problem in doctoral education. *Australian Universities Review* 54 (1): 10–18.
Hall, S. 1996. Who needs identity. In *Questions of cultural identity*, ed. S. Hall and P. du Gay. London: Sage.
Hargreaves, A., and M. Fullan. 2012. *Professional capital: Transforming teaching in every school*, 81. New York: Teachers College Press.
Hawley, P. 2010. *Being bright is not enough: The unwritten rules of doctoral study*. 3rd ed. Springfield: Charles C. Thomas.
Heidegger, M. 2008/1927. *Being and time*. Trans. J. Macquarrie and E. Robinson. New York: Harper Perennial.
Henry, J. 2007. Supervising aboriginal doctoral candidates. In *Supervising doctorates downunder: Keys to effective supervision in*, ed. C. Denholm and T. Evans. Camberwell: ACER Press.
Hershey, J.L.2007. *The lived experience of becoming a professional nurse for associate degree nursing graduates: A phenomenological study*. Doctoral dissertation. State College: The Pennsylvania State University.
Kahneman, D. 2003. A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist* 58 (9): 697–720.
Kahneman, D., and A. Tversky. 1979. Prospect theory: An analysis of decision under risk. *Econometrica* 47 (2): 263–292.
Kahneman, D., P.P. Wakker, and R. Sarin. 1997. Back to Bentham? Explorations of experienced utility. *The Quarterly Journal of Economics* 112 (2): 375–406.
Knight, F.H. 1964/1921. *Risk, uncertainty and profit*, 206. New York: Augustus M. Kelley.
Lahenius, K., and M. Martinuso. 2011. Different types of doctoral study processes. *Scandinavian Journal of Educational Research* 55 (6): 609–623.
Larkin, S., et al. 2010. *Submission to consultation paper: Meeting Australia's research workforce needs – A consultation paper to inform the development of the Australian Government's research workforce strategy from the indigenous higher education advisory council*. Canberra: Department of Innovation, Industry Science and Research.
Larkin, S., et al. 2011. *National indigenous higher education workforce strategy*. Canberra: The Indigenous Higher Education Advisory Council (IHEAC).
Lee, A., and B. Green. 2009. Supervision as metaphor. *Studies in Higher Education* 34 (6): 615–630.
Lefebvre, H. 1991/1974. *The production of space*. Trans. D. Nicholson-Smith. Oxford, UK: Blackwell.
Lewis, M.H., and G.E. Dehler. 2000. Learning through paradox: A pedagogical strategy for exploring contradictions and complexity. *Journal of Management Education* 24 (6): 710.
Lusted, D. 1986. Why pedagogy? *Screen* 27 (5): 2–14.

Manathunga, C. 2015. Intercultural doctoral supervision: The centrality of place, time and other forms of knowledge. *Arts & Humanities in Higher Education* 0 (0): 1–12.
McCormack, C. 2004. Tensions between student and institutional conceptions of postgraduate research. *Studies in Higher Education* 29 (3): 319–334.
McKinley, E., B. Grant, S. Middleton, K. Irwin, and L.R.T. Williams. 2011. Working at the Interface: Indigenous students' experience of undertaking doctoral studies in Aotearoa New Zealand. *Equity and Excellence in Education* 44 (1): 115–132.
Pearson, M. 1999. The changing environment for doctoral education in Australia: Implications for quality management, improvement and innovation. *Higher Education Research and Development* 18 (3): 269–287.
Pechenkina, E., E. Kowal, and Y. Parides. 2011. Indigenous Australian students' participation rates in higher education: Exploring the role of universities. *Indigenous Education* 40: 59–68.
Pidgeon, M., and D.G. Hardy Cox. 2002. Researching with aboriginal peoples: Practices and principles. *Canadian Journal of Native Education* 26 (2): 96.
Polanyi, M. 1958. *Personal knowledge: Towards a post-critical philosophy*. Chicago: University of Chicago Press.
Polanyi, M. 1965. The structure of consciousness. *Brain* 88: 799–810.
Polanyi, M. 1966. *The tacit dimension*. Garden City: Doubleday & Company.
Pyhältö, K., A. Toom, J. Stubb, and K. Lonka. 2012. Challenges of becoming a scholar: A study of doctoral students of becoming a scholar. *ISRN Education* 2012:1–12. Retrieved from https://doi.org/10.5402/2012/934941.
Ryle, G. 2009/1949. *The concept of mind*. London: Routledge.
Schein, E.H. 1985. *Organizational culture and leadership*. San Francisco: Jossey-Bass.
Schofield, T., R. O'Brien, and J. Gilroy. 2013. Indigenous higher education: Overcoming barriers to participation in research higher degree programs. *Australian Aboriginal Studies* 2: 13–28.
Snow, C.P. 1998/1959. *The two cultures*. Cambridge, UK: Cambridge University Press.
Trudget, M., S. Page, and N. Harrison. 2016. Brilliant minds: A snapshot of successful indigenous Australian doctoral students. *The Australian Journal of Indigenous Education* 45 (1): 70–79.
Trudgett, M. 2011. Western places, academic spaces and indigenous faces: Supervising indigenous Australian postgraduate students. *Teaching in Higher Education* 16 (4): 389–399.
Trudgett, M. 2014. Supervision provided to indigenous Australian doctoral students: A black and white issue. *Higher Education Research and Development* 33 (5): 1035–1048.
Tversky, A., and D. Kahneman. 1981. The framing of decisions and the psychology of choice. *Science* 211: 453–458.
Tversky, A., and D. Kahneman. 1986. Rational choice and the framing of decisions. *The Journal of Business* 59 (4): S251–S278.
Wagner, R.K., and R.J. Sternberg. 1985. Practical intelligence in real-world pursuits: The role of tacit knowledge. *Journal of Personal and Social Psychology* 49 (2): 436–458.
Weick, K.E. 1995. *Sensemaking in organizations*. Thousand Oaks: Sage.
Wergin, J.F., and L. Alexandre. 2016. Differentiation and integration: Managing the paradox in doctoral education. In *Emerging directions in doctoral education*, ed. P. Blessinger and D. Stockley, 225–242, Emerald Group Publishing Limited.
Wisker, G., and G. Robinson. 2014. Examiner practices and culturally inflected doctoral theses. *Discourse: Studies in the Cultural Politics of Education* 35 (2): 190–205.
Zeelenberg, M., J. Beattie, J. van der Pligt, and N.K. de Vries. 1996. Consequences of regret aversion: Effects of expected feedback on risky decision making. *Organizational Behavior and Human Decision Processes* 65 (2): 148–158.
Zhang, Z. What is lived space? *Ephemera* 6 (2): 219–223.
Zhao, C.-M., C.M. Golde, and A.C. McCormick. 2007. More than a signature: How advisor choice and advisor behaviour affect doctoral student satisfaction. *Journal of Further and Higher Education* 31 (3): 263–281.

Afterword

Professor Ronel Erwee, the first-named editor of this volume, passed away on 10 March 2017. Professor Erwee made many significant contributions to the University of Southern Queensland (USQ), where she commenced in 1998, to postgraduate supervision nationally and to the discipline of management internationally. Her outstanding academic achievements are detailed under the editor biographical notes.

Outside academia, Professor Erwee served women in a variety of ways, including mentoring many other female USQ staff members and being instrumental in the development of USQ's Women's Network over the years. Within the Toowoomba community, she was heavily involved in a number of groups, including Zonta, which focuses on empowering women globally through advocacy and service.

Professor Erwee constantly strove for excellence in all that she did professionally. At the same time, she was renowned for her warmth, straight talking, integrity, and sense of collegiality. Her passionate and proactive commitment to the supervision and support of postgraduate research students stand out as a contribution that will have an ongoing impact in her discipline area in the years to come. It is entirely fitting that USQ has established the Ronel Erwee Memorial Award for Excellence in Postgraduate Research Supervision in Professor Erwee's honor.

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