Commencing an Australian Ph.D.

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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.

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