



VOL. I

**ENSURING
QUALITY IN
PROFESSIONAL
EDUCATION**

**Human Client Fields Pedagogy
and Knowledge Structures**

Edited by

**Karen Trimmer, Tara Newman
& Fernando F. Padró**



Ensuring Quality in Professional Education

Volume I

Karen Trimmer
Tara Newman • Fernando F. Padró
Editors

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Human Client Fields Pedagogy and
Knowledge Structures

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Karen Trimmer, Tara Newman and Fernando F. Padró
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1

The Need for Case Studies to Illustrate Quality Practice: Teaching in Higher Education to Ensure Quality of Entry Level Professionals

Tara Newman, Karen Trimmer, and Fernando F. Padró

Introduction

Discussions about professions have taken different forms over the years. Professions are often treated to this day as homogeneous groups or classes of individuals coalescing together into practice and values (Bucher & Strauss, 1961). However, within them exist conflicts of interests and tensions from sub-specialties, professional elites and the grassroots, resulting status hierarchies and simply different views on the ideologies embedded within accepted standards of practice and ethical considerations (Saks, 2015). Within higher education institutions (HEIs), the question for a long time has been the one asked by Flexner back in 1930: “How are we to distinguish professions that belong to universities from vocations that do not belong to them?” (p. 29) When it comes to professional education

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another question that is tacit yet present is what are the characteristics or paradigm consensus through which professional education programs should be understood (Stark, 1998).

Specifics about the meaning of what a profession is have varied over the years to reflect different interests regarding its nature, purpose and role (Evans, 2010). At one level it can be argued that the definition and view of professions has not changed much at all from the time of Flexner (1930) who defined professions in terms of attributes and characteristics such as intellectuality (“learned professions”), attitude toward achieving results and altruism (as reflected in a code of honour). This functional approach to professions as institutions allowed/allows for a functional perspective to be applied (Parsons, 1939). Prevalence of this approach is notable in how professional associations and agencies use this type of definition. Consider Professional Australia’s current definition:

... a disciplined group of individuals who adhere to ethical standards and who hold themselves out as, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to apply this knowledge and exercise these skills in the interest of others (<http://www.professions.com.au/about-us/what-is-a-professional>).

This definition embeds the following attributes identified by Jenkins (1983):

1. A demonstration of a unique set of abilities that cannot be performed by ordinary individuals even at a minimal level of competency.
2. The basis of the profession is an intellectual underpinning derived from a systematic theory or arcane body of knowledge that must be learned in order to achieve competency.
3. Being client-centred and existing to satisfy a significant social need; driven by a concern for others.
4. Practitioners are bonded together in associations that serve to confirm the qualified and exclude the unqualified as well as provide accountability to the public at large that the members indeed are able to deliver services in a competent and confident manner.

5. Often accorded a monopoly of licensure or equivalent to protect the public from harm, with standards of practice put in place to guarantee competence.
6. Possess a regulatory code of ethical conduct that is unique and demanding specific to the care and the standards of care given to the recipient of the members' services to which all practitioners must comply.
7. Assumption of responsibility for all acts within the scope of defined service(s) as well as provide the definition for autonomy of action through their defined accepted standards of practice.
8. Practitioners are accorded a fee or salary for services in relation to need and status.

Recent developments in defining the term profession pertain to status and the fluidity of professions moving from a semi-profession or sub-profession to full recognition as a profession (cf. Hoyle, 1982). Etzioni (1969) looked at the preparation requirements (among other attributes) and status provided to practitioners in education, nursing and social work to determine how status correlates with actual attributes, auguring interest in this line of research on professions. More recently, however, there is an interest in the ethical practice of professionals (e.g., Cheng, 2016; Evetts, 2006), professional identity (e.g., Marsico, 2012; Sterrett, 2015; Whitchurch, 2008) and the 'becoming' and 'transformational' aspects of a professional expertise in practice (e.g., Westbroek, Klaasen, Bulte, & Pilot, 2010; King, 2004; Yelder, 2004). If there is one element that comes through over time, however, is the view that professionals represent expertise (Jarvis, 1999).

In terms of professional education, the key to effective preparation ultimately rests with the value employers and other end-users place on the focus, emphasis and balance between the academic and the practical in relationship to their own expectations for skills graduates must have to garner their interest (Beaver, 1992). There is a balance different professions have to maintain between the HEI programs and end-users given that the connections between HEIs, end-users and the practitioner who now is recognised as a member of the profession are made outside HEI boundaries (Noordegraaf, 2011). Job churning and workflow concerns

along with employer and employee attractiveness to each other provide exogenous variables that cannot be accounted for directly. Instead, these variables are dealt with indirectly through value inculcation within the professional education programs and by influencing the external environment through reciprocal relationships (Padró & Green, *in press*; Padró & Hawke, 2003). Determining quality in professional education programs has been recognised from the time of Flexner (1910) as emanating from the link between public perception, universities and the professions. This is one reason why professional associations and/or government regulatory bodies determine, enforce and monitor accepted standards of practice and often directly influence professional education programs to assure and ensure compliance for legal (duty of care) and quality determination reasons (mainly based on fitness for purpose). Both professional associations and regulatory bodies at times make the case to improve a profession's standing in the public eye as a means of generating approval of activities and functions performed and/or increase in salaries (Hoyle, 1982). Enacted standards of practice can take on different forms, i.e., benchmarks, criteria, guidelines and standards—the difference being the degree of prescriptiveness desired from HEIs. Effectively, regulatory bodies set (or sometimes collaboratively set with professional bodies) standards or equivalents that define the basic elements of what a profession's preparation must have for graduates to be recognised as meeting minimal expectations for becoming a professional. Most of the time these standards or equivalent are silent on specific direction regarding pedagogical techniques, the exception being when the profession views field-based preparation as a requirement as an experiential component. Under those conditions, standards or equivalents provide some form of direction relating to the approach and minimum time requirements. Otherwise, quality teaching practices are often outlined in other documents, often institutionally designed. The goals for the educator, then, are to:

- share relevant information and insights;
- engage students in disciplinary thought and reflection;
- involve them in discovery as well as listening and observing; and
- enable students to relate what is being learned in one course to that completed elsewhere in the program (Price, 2010).

It is now widely accepted by higher education institutions delivering professional pre-service courses that theoretical content knowledge and expertise in its application within a variety of practical industry contexts are both essential components of a desired outcome for professional graduates. The focus on content is now seen as not enough if, for no other reason, that the knowledge base reflects past experience while the students are being prepared to encounter new realities (Jarvis, 1999). Mastery is not enough as broader affective considerations desired are critical as well (Sen, 2004). Whilst the need for change to incorporate more student-centred and practice-oriented curricula and teaching industry and the engineering education research community has been discussed for over a decade (Heywood, 2005; Reidsema, Hadgraft, Cameron, & King, 2011), Jolly (2016) indicates that there has been minimal progress made in the development of improved educational approaches for achieving significant change in instructional and curricular design for engineering professionals. This book aims to provide a range of case studies to demonstrate how such change is now occurring in a range of professions.

Volume Content and Structure

This companion pair of book volumes addresses key debates and issues around quality of teaching and learning in higher education sector for professional preparation. Each volume focusing on two of Stark's (1998) types of professional fields: human client fields and enterprise/production fields. The first chapter for both volumes explores definitions and issues in the field, historically and how these have developed in relation to professional education and how education/preparation quality is defined, shaped and perceived in these fields. Each volume commences with chapters that review in detail current issues that are internationally relevant to students within the professions, higher education providers and employers. Each volume then provides case studies about quality teaching practices in professions in which practice is linked to external licensing. This Volume 1 represents the health-related fields of midwifery, nursing, pharmacy and psychology in, and the enterprise/production

field of engineering is presented in Volume 2. Many of these professions actively express heightened interest in the learning and teaching components of professional preparation beyond simple gatekeeping of those unfit to practice in these fields. Such interest reflects concerns over the current quality of entry level professionals in terms of skills they bring into fields undergoing change in terms of definition of competence, levels of expectation and knowledge. The cases presented in these two volumes will attempt to address these concerns by providing insight on the educational process in a variety of professions.

The case study approach is used to highlight exemplary practice in the aforementioned professions. Using case studies can make a difference because they put learning into context (Herreid, 2012). This can occur by using cases as a vehicle for self-examination and self-awareness (Bass, Garn, & Monroe, 2010), two responses which the book seeks to elicit from readers as they consider how to best teach students in these fields. Case studies can be based on real and actual situations or they can be created in order to provide context to particular issues that students need to consider and apply. This book provides a combination of both to illustrate key points highlighting those elements constituting effective practice within professional education (Ambrosini, Bowman, & Collier, 2010). Each of the identified professions has case studies illustrating and exploring quality educational practice within professional preparation. Authors provide cases of quality practice in those areas that teachers in higher education exhibit as part of their metaprofessional responsibilities (cf. Arreola, Theall, & Aleamoni, 2003). Implicit in their writing is a recognition of the nexus between access, equity and quality in meeting the demands for well-prepared practitioners in these fields (United Nations Economic, Social and Cultural Organization [UNESCO], 2010). Authors also discuss the need for review of pedagogy, curriculum and practice components of education in the professions where concerns have been raised in regard to quality of pre-service education or the skills and knowledge of graduates.

Higher education institutions are incorporating technology into both pedagogical approaches and delivery of courses which has a significant impact on instruction and assessment in professional preparation programs. This is highlighted throughout chapters and across professions.

For example, the use of ePortfolios in midwifery, pharmacy and engineering demonstrate their versatility for construction of knowledge, demonstration of outcomes achieved, engagement with authentic professional tasks and assessment. Virtual engagement with scenarios is also being utilised alongside practicum placements to provide insight into industry contexts and problem solving in nursing and engineering. Though the limitations of such approaches in regard to the building of relationships and cultural awareness are also discussed in relation to nursing.

The Introductory Chapter outlines the need for case studies of quality practice for teaching within the professions in higher education. There are different philosophical approaches toward the professions and a range of pathways for preparing well qualified graduates who meet the expectations of employers, professional associations and regulatory bodies. Most professions have guidelines or standards generated by professional associations or their equivalent (Padró & Hawke, 2003) and by government regulatory bodies. Decisions on content, curriculum alignment, in-class and out-of-class learning experiences, pedagogical techniques, and integration of research in developing a course or program ultimately reflect the needs of employers and the value employers place on how programs balance between the 'academic' and 'practical' in preparing graduates (cf. Beaver, 1992). This is reflected in the World Health Organization's (WHO, 2013) desire to see greater alignment between educational institutions and the healthcare system to drive needed transformative change to health care systems across the world to provide quality of care through access to a full spectrum of professionals that are competent, capable and motivated to provide high quality service.

The second chapter evaluates a range of teaching practice and support tools being used in professional programs including consideration of delivery and resourcing. Having such a range emphasises that meeting standards should not be confused with creating only one approach toward professional preparation (McPeak, Pincus, & Sundem, 2012). Indeed, there is little evidence that there is an association in health education between quality criteria or standards in preparation settings (professional education and training) and personal competence as a professional (Nolte, Fry, Winpenny, & Breerton, 2011; WHO, 2013). Chapter 3

looks specifically at the use of simulations and how these are used in teaching to bridge the gap between theory and practice, an approach recommended by the WHO (2013) as a means to improve the curriculum. Simulations, especially in clinical settings, have been gradually establishing a role in health care education from the late twentieth century onward as a means of improving the quality of professional preparation (Bradley, 2006). This chapter draws on case studies of higher education courses in Norway to explore how simulations are designed and used, and their potential for knowledge integration.

The following chapters within Volume 1 present case studies within the Human Client Fields of health, nursing, pharmacy and psychology. Chapter 4 reports the results of a case where ePortfolios were used to prepare first year midwifery students for professional practice. The ePortfolio provides a means for students to present authentic and specific evidence of their engagement in clinical field experiences to meet the requirements of the Australian Nursing and Midwifery Accreditation Council (ANMAC). The driving idea is that developing a portfolio can assist in the development of nursing competency (Green, Wyllie, & Jackson, 2014). The model of reflective practice encouraged students to participate actively in their own learning, by providing a link between clinical practice, evidence from the literature and theory taught at university to prepare students for the demands of the workplace. Chapter 5 reflects on a model of quality curriculum as a means of simultaneously developing health promotion graduates' discipline competence and the generic skills and attributes necessary for future practitioners in a seamless and integrated way. Graduate attributes are dealt with in different ways at different universities (Barrie, 2004) thus bringing to question the extent to which they are effectively embedded within professional preparation programs, even though these are often tied to employability skills through encouragement from professional associations and regulatory agencies such as Australia's Tertiary Education Quality and Standards Agency (TEQSA—Nagarajan & Edwards, 2014). The Health Promotion program leveraged the graduate attribute model of programmatic curriculum design, explicit learning and teaching experiences, plus connected and authentic assessment development to produce a cohesive learning experience for students.

Chapters 6 and 7 reflect on knowledge and skills necessary for professional practice in nursing. From the perspective of a nursing practitioner, Chap. 6 considers the needs of patients, communities and nurses themselves for a nursing workforce that is competent in cultural care. Nurses spend more time providing nursing care than other healthcare providers, thus there is a critical need for nursing curricula to incorporate culturally competent nursing practices (Choi & Kim, 2018). It is argued that further development of nursing higher education programs is required through targeted courses and through embedding of cultural awareness within other theory courses to flow through to current clinical practice. Viable Knowledge is a concept addressed in Chap. 7 in the context of Nurse Education that considers the particular experience of a student nurse. The different types of knowledge within the curriculum are appraised and a theoretical model supporting the inter-relationship between theory and practice constructed to ensure that the theoretical component of the program can best support the practical application necessary for professional practice. This chapter looks at knowledge development as a form personal transformation through meaning making (Bruner, 1996). Knowledge is thus treated differently than Machlup's (1962) socially-focused classification of practical, intellectual, small-talk/pastime, spiritual and unwanted knowledge. Nonetheless, looking at the different approaches brings to the fore a question what happens when the knowledge formed from personal meaning making and self-identity as a new professional comes up against externally determined—standards defined—'wanted' and 'unwanted' knowledge. Even though the author does not pick up this perspective, it is an interesting one for those focusing on 'quality' as framed by standard or equivalents and graduate attributes closely aligned with employability. This poses an interesting potential conundrum in terms of capability as Sen (2004) sees it—in terms of the quality of life of a practicing professional in the field—and how professional practice is viewed and evaluated based on Noriaki Kano's two-dimensional model of attractive quality based on external evaluation of specific quality attributes (Löfgren, Witell, & Gustafsson, 2011). As Judd and Winder (1995) indicated, "[p]sychology plays a significant role in the process of quality, both within the organization and in the relationship the organization has with its cus-

tomers” (p. 287). The issue here being how ‘customer needs’ (current and potential students, employers, professional bodies, regulatory agencies and other end-users such as clients or patients) impact ‘customer satisfaction’ (Mohsin, Padró, & Trimmer, 2018) and how this in turn affects the personal identity of current and new practitioners. At the end of the day, becoming a professional—and remaining one in the field—is based on how individuals interpret and make sense of personal experience (Press & Padró, 2017).

A conceptual framework incorporating clinical professionalism, team performance and a patient-centred perspective is discussed in Chap. 8 as a means of improving planning, designing and assessing inter-professional teamwork training in healthcare settings. A case study of a Norwegian educational setting for medical and nursing students is used to exemplify design issues and implementation of a simulation-based collaborative team. Interprofessional education prepares students in the health professions to provide patient care in a collaborative team environment (Buring et al., 2009). It is advocated in the literature because these learning experiences challenge the unilateral view of any one professional practice (Khalili, Orchard, Spence Laschinger, & Farah, 2013; Sterrett, 2015). Reported advantages of this approach include increased mutual respect and trust between team members from other healthcare fields, improved understanding of roles and responsibilities, effective communication, increased job satisfaction and positive impact on patient outcomes (Homeyer, Hoffmann, Hingst, Oppermann, & Dreier-Wolfgramm, 2018). The benefit of using simulations is that, as Bradley (2006) pointed out, they enable the learning and training of individuals and teams without becoming distracted by the ongoing work in a live clinical setting.

“Ideally, the institutions, roles, and other structures of professional fields—including professional education—should be well aligned with the enduring values, standards and purposes of the profession as well as with individual practitioners’ aspirations and the interests of other stakeholders” (Colby & Sullivan, 2008, p. 406). Students are part of this alignment from different perspectives; however, they are normally considered as receivers rather than as co-constructors of curricular (and co-curricular) learning experiences (Press, 2018). Chapter 9 discusses

nursing student involvement in curriculum development in their clinical skills training. Aspects of their training include inter-professional training sessions and the use of a technological learning tool. Contrary to practice in many instances of curriculum design (Shulman, 2005), active user involvement and input to the curriculum design process considers nursing students as knowledgeable and critical partners in improving teaching and learning in the profession.

Further to Colby and Sullivan's (2008) comments on the alignment of standards and values, Barnett and Coate (2005) articulated how curricular experiences in professional education integrate the self (student) into the action domains in student preparation. Therefore, a commitment to lifelong learning necessitates that health professionals are capable of reflexivity and self-assessment, and have a familiarity with their profession's Competency Standards National Framework to execute and evidence continued professional development. In Chap. 10 the authors explore three educational techniques undertaken with pharmacy students aiming to scaffold the development of skills essential for a solid foundation in lifelong learning—flipped classroom, self-assessment and ePortfolio. These methods provide students with a long-term view of learning and its application in personal and professional lives. For example, ePortfolios provide opportunities to demonstrate and showcase what students have done as part of their learning (Heinrich, Bhattacharya, & Rayudum 2007) and potentially serve as a means of continuing professional development and maintenance throughout their professional lifetime (Stuart & Triola, 2015). Furthermore, changes in technology facilitated changes in thinking about how learning occurs in classroom situations within health related professional education as exemplified by the 'flipped classroom' approach (Stuart & Triola, 2015). Chapter 11 focuses on the Work-Integrated Learning (WIL) program being used to assist in the development of students' competencies and expectations about working in psychology-related fields at one university. The idea is for students to have an opportunity to integrate academic learning and practical experience, especially because core attributes of the undergraduate psychology degree overlap with attributes favoured by employers (Hamilton et al., 2018). The design of the program, which incorporates a significant proportion of skills training and field experiences, has led to students devel-

oping a comprehensive skill set and a deep understanding of their personal employability, increased students' levels of insight and self-awareness and enabled them to critically link their theoretical knowledge to real world practice.

Kincheloe and Steinberg (2008) found it pedagogically tragic "that various indigenous knowledges of how action affects reality in particular locales have been dismissed from academic curricula" (p. 136). One area they suggested was the culturally based epistemological clash of what is considered evidence in support of a body of knowledge and practice within it. This clash exemplifies Bourdieu's (1993) observation of how the principle of legitimacy is based on the perspective of the dominant culture. The final case study chapter in this volume presents challenges faced by Aboriginal and Torres Island Strait doctoral students in nursing. There are many challenges to increase the number of doctoral students enrolled in doctoral programs linked to the need to enhance research opportunities in Aboriginal and Torres Island Strait communities. Here is an instance of where the two quality considerations of intention based on 'of purpose' and 'for purpose' are equally important and need exploration rather than taken at face value if, for no other reason, the throughput nature of the doctoral research and supervision processes. These bring to the fore the issues of appropriateness of the rationale behind the epistemic concerns of doctoral education along with the ontological aspect of achieving what many consider an apex qualification in a profession. Issues and potential solutions are discussed.

The final Chap. 13 briefly considers returns to notions of quality in professional education, focusing on the conceptual complexities of quality assurance in higher education for the professions in relation to the multiple outcomes of employability, institutional and other requisite standards. The narrative weaves through the in-between space that learning represents as noted by Barnett and Coate's (2005) curricular schema. What comes across is the "shifting milieu of ideas, events, appearances, and meanings" (Soja, 1996, p. 2) that the case studies in this volume represent. This chapter links back to the transformational aspects of curriculum change, pedagogy and educational quality explored in the previous case study chapters for achieving quality graduate outcomes for the professions through higher education.

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2

Higher Education in the Professions: Illustrations of Quality Practice in Teaching and Learning

Christopher Gorse, Richard Cozzens, Lloyd Scott,
and Ian Dickinson

Introduction

While educators and tutors might embrace new technology, they should be mindful that many of the traditional principles of engagement to create an effective learning environment may still be applicable—they should not be blinded by the sometimes overstated capabilities of these technologies to actually engage students in learning.

With some new technologies there will be significant differences in the type of approach to learning and engagement that is possible, which may prevent ‘standard’ delivery modes being applicable. Those developing

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and supporting professional programmes must be considerate of the strengths and limitations of various teaching and learning tools.

When utilising technology to support learning, a review of the programme should be undertaken to ensure the delivery matches the professional skills and outcomes required. The learning outcomes and requirements are often stated without due consideration of the programme delivery, resources available and needs of the learner. The work reported here provides insights to help understand the challenges of delivery and reception and outlines the processes and tools that can improve and assure the quality of the learning experience.

It is clear that educators must move with the times to ensure teaching and learning is current. At the same time educators must ensure that the digital environment and resources accessed for teaching and learning are fit for purpose.

“The web represents access to a vast array of resources and opportunities to collaborate to support teaching and learning. To ensure our institutions are relevant and credible places of learning we must embrace the influence of the digital and evolve our approaches accordingly.” Dave White, head of technology enhanced learning at the University of the Arts London (JISC, 2015)

Evaluating Mixed Modes of Delivery for Professional Education

Those who enter academia do so for a variety of reasons, but at the heart of most who do, there is a desire to enrich the student learning experience and to be part of and influence the academic endeavor so that the benefits of education can be more meaningfully borne out. Many regard (higher) education as a key to a richer life experience, a way of unlocking an individual’s potential and imagination. Although professional roles and courses have a vocational bias, the committed, professional student will often seek to extend the learning experience, going beyond the bounds of the field. Students should be enabled to find their own direction and unlock future opportunities, whatever and wherever they may be. The professional bodies require course attributes that go beyond field related content.

There is general proposition from professional bodies (CIOB, RTPI, RICS and RIBA), that Built Environment professionals should demonstrate integrity, honesty, openness, objectivity and respect adopting ethical decision making and practice. Following on from such principles, professionals are guided to:

- Contribute to building an inclusive society;
- Apply professional and responsible judgement, through their leadership and influential role;
- Communicate organisational values and applying ethical decision making;
- Deliver ethical improvement, going beyond the legislative infrastructure, doing more than simply addressing codes, standards and compliance requirement;
- Adopt responsible and integrated behavior to present an ethical view, through the consideration of multiple views and positions; helping to solve accessibility and inclusivity challenges.
- Acquire the skills, knowledge, understanding and confidence to make inclusion the norm, not the exception.

(Bowen, Pearl, & Akintoye, 2007; Fewings, 2009)

Such ultraistic aims are admirable but ethical positions are rarely impartial; they may be influenced by morals or professional standards, out of self-interest (utilitarian), form a democratic position adopting justice and equality, as a result of rules or could be of a virtuous nature—for the benefit of society (Fewings, 2009). The dilemma of ethics is that they are changeable, responding to the needs of society and the individual over time. Thus, the professional should not be limited by their professional body of knowledge. While specific core knowledge may be required for professional accreditation, the challenge of professional educator is to build an enquiring more open mind, that is able to consider an evolving ethical position.

Students are encouraged to explore and learn and the digital environment is rich with information and has almost boundless education potential. Furthermore, the digital content on open platforms rapidly evolves and changes, ensuring information is current; however, the nature of

open content is difficult to control and the learner requires the skills to make value judgements about messages and information found.

The capability to learn, rationalize and respond appropriately and ‘ethically’ through an informed position is where education sits within the professional field. As professional digital content and platforms are explored, educators should be considerate of the greater role of education. However, a blended framework may be able to better support the development of core knowledge while allowing greater space for expanding the mind and education.

Professional Education: Core Knowledge

Professional Education (PE) has been defined in different ways and can be contextualized by the overall goal of education. For many, Professional Education would be the means through which people qualify for a particular profession or develop specific knowledge and skills to operate in that field. Also, Professional Education can be defined by the type of educational institution; this would be the education obtained in professional accredited programs, or from registered and accredited universities and institutes. The type of Professional Education that is established, the duration of training, and the degrees obtained are often dependent on the system of education in each a particular region, state or country. The systems of education, and its culture, in different regions and countries can be diverse. However, the differences are reduced or bounded by the expectations of the field, the rules set, standards and learning processes or tools that are shared. The sharing of common tools may help to reinforce standards and professional core content.

The professions or specialist fields which the graduates qualify for are defined by the structure of education. As will be discussed later, the structure of education is constantly evolving, with digitisation, the internet of things, internet and through the integration of various media. Digitisation, digitalisation and computing power is influencing change, which is also having an impact on Professional Education.

Professional Education has an important role to play in delivering education and training to the collective sector of the construction industry,

commonly referred to as AEC (Architectural Engineering and Construction). Education for inclusive design opens up buildings, places and spaces to everyone, enabling all of us to live, work, create and play together. New multiple methods of educational delivery are changing what can be offered, how it can be offered and where education takes place. The AEC industry has progressed, and so should the professional education associated with it. Digital tools should be embraced where they offer benefit to the development and reinforcement of core content and expand the potential of education.

Digitalisation and AEC Education

The higher education industry and its delivery of education and training have moved on. Where once the classroom and site based experience went hand-in-hand, the digital world now plays a significant role in most aspects of construction, including teaching, learning and training. Even the sole AEC practitioner or trader makes some and sometimes extensive use of the internet and digital world to review materials & products, access examples of practice, find work, access their safety skills training, work permits, safety licences, register their taxes, create designs, manage projects and accounts and update their knowledge. The use of digital information and platforms that can integrate practice now play a significant role in construction and education. Our building, cities and work places are becoming 'smart', sometimes with a vague distinction between the digital and real world (Oswald, 2017). This blurring of reality can be of benefit to education, offering the potential for virtual reality to bring the outside world into the classroom, creating more transient and potentially engaging learning spaces. Digital learning environments do not have to be limited by buildings, time and space, and are set to be more interactive and engaging; further increasing visual and technology literacy and personalising learning (Newman, 2017).

As the classroom evolves so too should the teaching practices. In a rapidly evolving world, the view that education should be one step ahead of practice is a challenging one, nevertheless education and the human can maintain the edge on computers (Shiller, 2015). As the construction

sector moves into the digital world and new digital business opportunities emerge, the education system has to evolve to support the professional environment; embracing the technology to equip students for the future. As well as ensuring students are familiar with new technology based environments, educators are ultimately focused on developing the human skills that computers are unable to duplicate. To develop relevant human skills, fit for a digital environment, higher education programs need to provide the environments that facilitate appropriate learning, not in parallel with the professional environment, but ahead of the digital curve, preparing students for the future. The need for the learner to work and engage with technology and to be able to see and exploit their human potential within that environment is paramount. Exposure to a classroom that stimulates and engages learning should be a transformational experience and one where a blended learning environment might be appropriate.

Before wholly adopting a digital learning environment, we have to be considerate of the digital infrastructure and access to learning resources.

Access to the Digital World

The developing world does not have the same degree of access to digital resources. However, research shows that while emerging economies are short of essential needs, developing communities often have access to mobile phones and the internet, albeit to a limited extent (Pushiter, 2016). Technology has the ability to overcome many of the geographical and some economic boundaries. Thus, the potential to engage more widely with digital education technology is available provided that the infrastructure, tools and support exist.

Technology is evolving quickly and is having a profound effect on how the nexus of education and construction is understood and practiced. Educators need to understand how they can work within the digital framework, learning how to take advantage of the benefits, working both within their own and students' capabilities.

Digitalisation has, over the past decade, taken hold of practices in higher education, including the AEC education sector, and in doing so

has transformed the ways in which learning is designed, delivered and assessed, especially in Built Environment education. Formative research, to date, has mainly focussed on characterising what ‘going digital’ means and how integrated digital education can benefit professionals in the AEC sector and those who take their place as professionals in that sector. Countervailing views have been offered by many critical management scholars, who offer a reality check on the sometimes overstated claims promised by advocates of digitalisation in education (Lawless, 2014). Other individuals and groups within the AEC sector and educators, however, have begun to focus on the benefits of blended digital practices as they make the transition towards embracing ‘full digital integration’.

Educational Philosophy: Using Real and Digital Content to Share a Context for Learning

Education is still being effectively delivered using traditional face-to-face techniques, however for some time now, the benefits of the digital world have been recognised as having an important and essential role. In many learning and teaching situations the philosophical difference perceived by many between the human face of education and that supported via a digitised platform is not so great, when there is adequate support (JISC, 2015). Within any formal curriculum there are defined or expected learning outcomes, often underpinned by accrediting bodies. The process is shaped as the teaching adopted attempts to engage the learner to enable the outcomes to be achieved.

To fully engage students in this process and realise the professional requirements, there needs to be sufficient overlap of understanding, a meeting of minds or appreciation of the authentic context in which the learning is expected to take place.

When using traditional face-to-face learning, the teacher or instructor attempts to create a context for learning, in much the same way that attempts are made with modern technology to frame, contextualise and engage the learner. The philosophical position (the underlying theory the educators are trying to achieve, encompassing the values and

viewpoints that underpin the educational framework) is important when considering what is required from an ‘effective’ and authentic learning environment.

Even with traditional face-to-face learning environments, engagement is supported with practice that stimulates and extends the mind of the learner, creating a mental context where development can take place. Vygotsky’s theory and the subsequently proposed “Zone of Proximal Development” elaborated on the concept of a central common space, between the educator and learner, for reception or interpretation and development of understanding (Kozulin, Gindis, Ageyev, & Miller, 2003). The theoretical framework offers a space where learning can take place.

Through the recounting of experiences, analogies, observations and stories, the educator makes attempts to enhance the connection with the learner and create a meaningful and stimulating context for cognition. The educator is seeking to create a closeness between contextual understanding and the delivery framework that allows a ‘connection’ to occur and effective learning to take place. The context in the mind of the educator and the learner are never quite the same (Sperber & Wilson, 1995), but the closer the experience is to that which the instructor perceives and students’ need, the greater the congruence and overlap in understanding, increasing the potential for learning. Figure 2.1 provides a schematic of the learning environment between educator and learner.

Figure 2.1 is useful for understanding the role of the professional educator within a blended digital environment, where their guidance can help the student navigate their learning experience. While students are unfamiliar with standards, professional values and essential knowledge, the educator and guidance offered through core information helps guide learning. The professional educator’s input in a digital learning space can help control and influence the authenticity of the learning environment as well as creating a space for learning. The interaction between educator, learner and the digital environment is essential and is fundamentally based on achieving the overlap in understanding, based on building on the learner’s current knowledge and using materials and engagement to stimulate further learning. The further learning is guided and influenced by the profession’s materials, resources and standards.

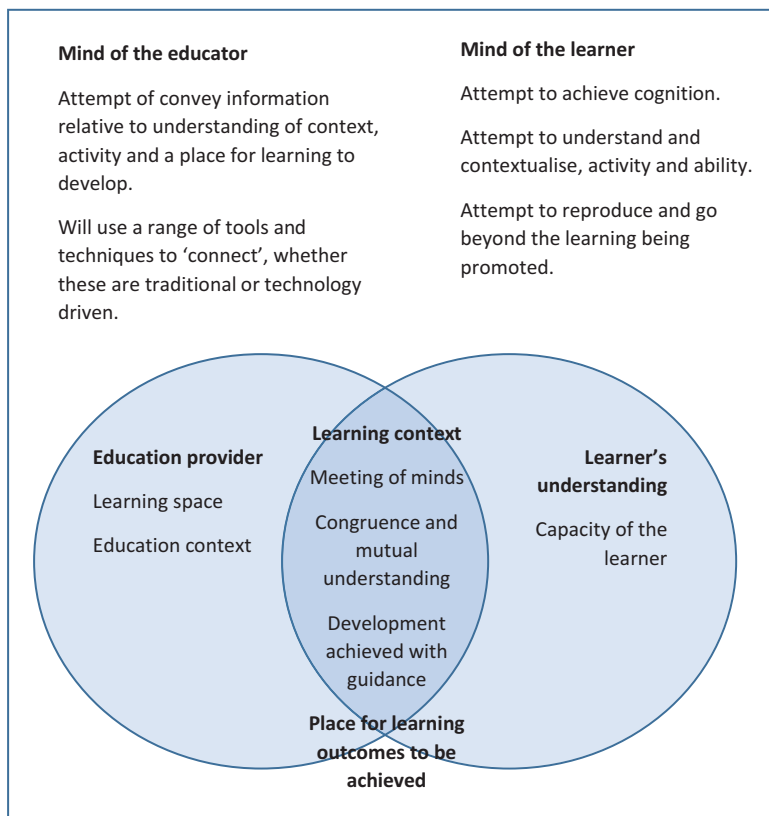


Fig. 2.1 The context for learning and congruence, providing the scaffolding for learning (adapted from Sperber & Wilson, 1995; Relevance theory and Vygotsky, 1978; Zone of Proximal Development)

Technology driven learning tools can support attempts to provide a similar experience to traditional learning environments. In traditional environments, the educator attempts to engage with the learner through various means, utilising the learner's knowledge. Where there is an existing level of understanding, on which new information can be imparted and built to develop new knowledge, the learning outcomes can be achieved. The use of traditional tools such as explanation, recap, gestures, text and mental images, can be used to expand the options available to stimulate and connect with the learner's current understanding and knowledge.

The traditional educator frames their explanations with text, images, sounds and movements. In a similar way, digital tools can be used to contextualise and build understanding. Animations, illustrations, augmented and virtual reality provide a supporting a framework on which learning can be developed. More advanced frameworks can accommodate different learning styles, progression rates and stimulate interest at different levels of complexity in much the same way that traditional methods do; if applied effectively they should enhance the learning experience.

In the context of blended learning, for example, a mixture of face-to-face teaching supported by online, asynchronous and synchronous communication technology, can be used to provide multiple points of connection, increasing access, while material can also be specifically created for or by the learner. Through multiple media, content 'as information' can be provided in various formats, as required and on demand (Wankel & Law, 2012).

Blended Learning: Incremental Approaches

A blended learning approach, using multiple tools and methods of delivery, offers an option to incrementally enhance, control and influence the learning experience. Adding different approaches to delivering the curriculum while receiving feedback on the effectiveness of new interventions has the potential to create a more robust learning environment. Blended learning is often used to increase student exposure to learning materials, offer different methods of study and to engage different learning styles. Blended delivery can utilise a different transfer medium helping to deliver material at a distance. The less face-to-face contact, the more educators become reliant on the quality of the interfaces, delivery tools and materials used. New and innovative methods of delivery may enable education and training where it otherwise would not be available face-to-face.

The provision of education can be restricted by circumstance, location, cost and many other factors; improving the ability to overcome or reduce the effect of these limitations, and in doing so, improving what can be offered to 'the communities of learning', is at the forefront of many academic endeavours. Traditional face-to-face learning is, for many, the

preferred method, and the one that most people are very familiar with. In the developing world there are still restrictions on and problems with accessing books and technology. In such circumstances, educators and tutors are limited to the resources which they can access and their expertise is limited to that which exists within their community. However, many communities in developing areas of the world, are becoming connected and digitalised through access to the internet and personal communication technology (Pushiter, 2016). Whilst resources can be desperately limited in these communities, there are opportunities to deliver learning experiences with experts, or embed expert knowledge at a distance using existing technologies.

Education and the ability to learn are often seen as the essential ingredients that can galvanise individuals and communities and provide an ability to engage with other regions, markets and consequently create opportunities and synergies that might not otherwise be readily available. This brief review does not attempt to tackle many of the social inequities currently existing in the now highly globalised world. However, it does seek to highlight some of the advantages of adopting a blended learning focus to augment the face-to-face delivery of education, whilst still delivering an effective learning experience. It is also acknowledged that online and face-to-face experiences can never be the same, but an attempt can be made to make them similarly effective.

Technology: Great Leaps Forward

Rosenberg (2001, p. 80) stated that, “Internet technologies have fundamentally altered the technological and economical landscapes so radically that it is now possible to make quantum leaps in the use of technology for learning.” Advances in technology and new ways of communicating are difficult to avoid, for example, consider the evolution of the telephone into the ubiquitous, portable personal device of diverse function, which many now carry simply out of necessity rather than convenience. Because of the all-encompassing nature of internet and communication technologies throughout modern society (in developed and developing countries), their role in teaching and learning cannot be ignored. However, their use

has to be carefully considered to ensure technology is appropriately and effectively deployed. Simply adopting technology for its own sake without considering the pedagogical reason for doing so, can lead to unstructured and disjointed online experiences. Many technologies also require their own unique infrastructure, so the user has to be equipped and experienced (and trained) in its proper use. There are also concerns for people with impairments who might not be able to effectively use some systems. There are rapid advances in technology focused on accessibility and these act to enhance the user experience for everyone. These advances include: making text easier to read, using spoken words and providing a variety of communication and interaction devices that increase the ability of more people to access and use technology effectively. Those who create and develop technology are focussed on overcoming barriers to access and use, and consequently on increasing the potential for technologies to better support life-long learning for all.

It is now possible to offer education and stimulate learning in ways which were not previously thought possible, so the ‘quantum leap’, which Rosenberg referred to, may in part have already occurred. Technology has the ability to replace the tutor—consider von Neumann teaching machines for example (Cecilia & Gasperis, 2016), and some of the other learning packages that are unsupported, but in most situations the education provider uses the technology to supplement and support teaching and learning, tailoring learning experience to the needs of the learner. Using technologies to provide a framework and methods of interaction that stimulate engagement and create learning opportunities, where they were previously not plausible and advancing the levels of educational attainment, is an area where many educators focus their attention.

Online Quality and Stakeholder Involvement

There is, however, some concern with the quality of online courses. One reason for the concern is that they often do not result in the success expected (Attwell, 2006). Some studies have found significant dropout

rates from distant and remote learning programmes. In the review of Hunnum, Irvin, and Farmer (2009), 44% of the schools observed stopped using distance education because of lack of engagement from students. Some researchers have suggested that this, in part, is a result of poor curriculum design, particularly with regard to the interaction and engagement.

When designing the curriculum, attention needs to be given to the delivery tools that are to be used, the content they are expected to provide and those involved. Where at all possible, it is important to involve the primary stakeholders (educators, teachers, developers, students and administrators). Feedback is needed to understand the development needs, to ensure that delivery and assessment meet the needs of the students and that teaching and learning experience is appropriate. The social culture of the students and their learning environment should be considered to optimise the potential for learning. Peers, colleagues and social groups can all become part of the learning experience (Boocock, 1973). To achieve social learning, the social environment where the students learn must be given due consideration. Some methods of delivery may not be suitable for different cultures and countries and there is a need for courses, content and delivery to be suitably adjusted to be effective. Gaining a deeper understanding of what is required to deliver a 'quality curriculum' (Stabback, 2016) from the multiple perspectives, using the feedback from different stakeholders is important and is discussed below. Figure 2.2 provides a schematic of the key stakeholders and the context in which feedback can be obtained. Learning programmes should be carefully designed with consideration for the learning environment, and then should be refined and reframed to improve the fit and engagement. Those designing the programme require feedback from those delivering, administrating and engaging in learning. Those engaged and the physical and social infrastructure all play a part in the success of the learning environment. Each of the factors outlined in Fig. 2.2 plays a part and is connected to and also influences the learning experience.

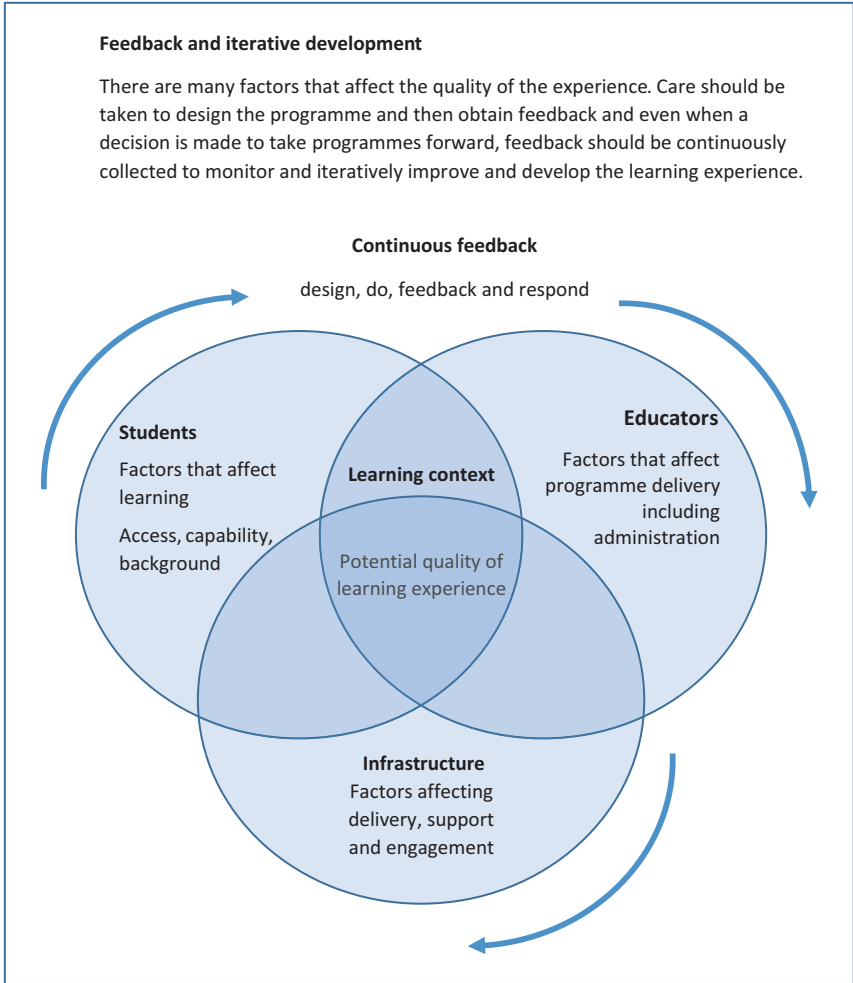


Fig. 2.2 Feedback on the technical, educational, cultural context to provide an effective learning experience

Engaging with Different Interests and Abilities

The flexibility to incorporate components known to be appropriate for different abilities and interests, what Brualdi (1996) terms ‘intelligences’, is a major advantage of a hybrid and online curriculum. The ability to

appropriately differentiate between the ability and pace of the learner, at all times attempting to engage and maintain interest, is a challenge especially as cohort sizes increase. Being able to accommodate different learning styles, through different learning objects and approaches to learning, is of significant benefit (McLeod, 2013). The use of supplementary tools, which allow students to revisit and reflect on their learning, may engage students with different learning styles.

The VARK learning style survey, which assesses student attributes in terms of visual, aural, read/write and kinaesthetic learning, has been used to develop curricula to determine and help address students' learning style. Research is of interest, but not always conclusive, the differences sometimes being masked or addressed by diverse social and mixed media environments. While Pamela (2011) found that visual learners prefer to work in a technology based collaborative learning environment, Sek, Deng, McKay, and Qian (2015) investigating the impact of learning styles when students experienced 'open learner models', did not find a significant difference in their use of the collaborative technology. Clearly, there is a need for further research in this area and for better understanding of the social and technology driven learning environment. The work of Cozzens (2017) outlined in the case studies below provide further insight.

Educator Preference and Use of Digital Technology

Some of the approaches and techniques that have been used in an attempt to enhance learning include: flipped classrooms (where instructional content is delivered online to feed into the classroom experience), hybrid courses or blended learning (a mixture of traditional face to face and online learning), online courses and massive open online courses (MOOCs). With each approach there are a multitude of learning tools and approaches which can be used to enhance the learning experience and help accommodate the different learning styles (see Fig. 2.3, adapted from Hunter, 2015).

Hartman (2004), documenting the experiences of the students and instructors, in an effort to discover what made the courses effective, found that instructors with more traditional philosophies tended to prefer old modes of content delivery (e.g. a face-to-face classroom setting) rather than wanting to embrace newer methods of teaching (e.g. hybrid and

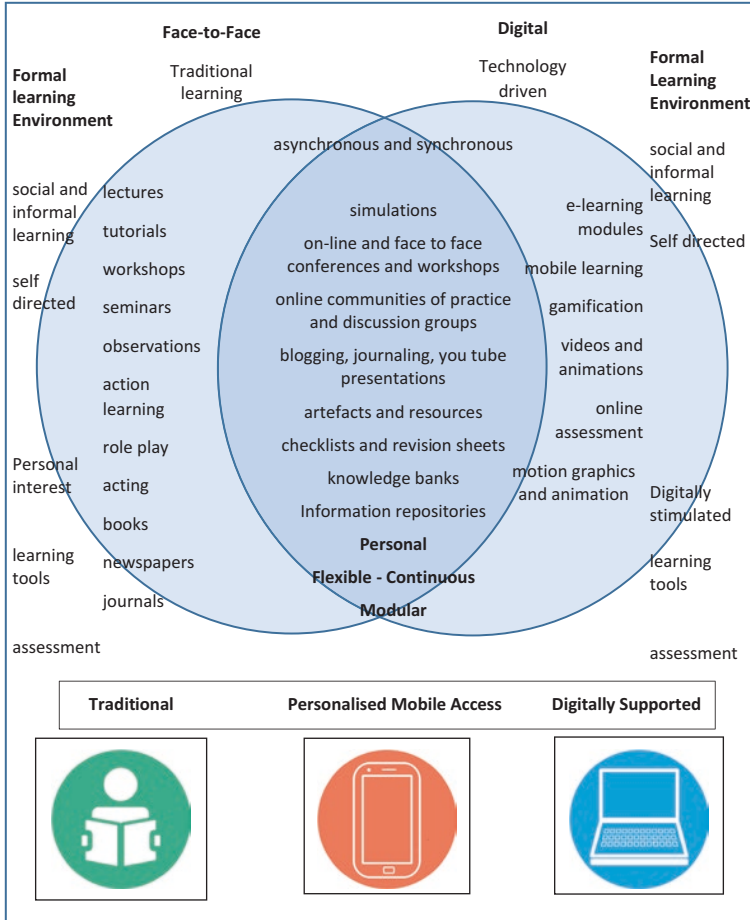


Fig. 2.3 Blended and flipped classroom (adapted from Hunter 2015)

online courses). The avoidance of newer technology has been identified as a factor that can impact the effectiveness of a hybrid or online curriculum and its delivery (Hartman, 2004). Where instructors hold a negative attitude toward new learning technology, are less willing to engage, or do not have the capacity to develop new digital teaching and learning skills, they can have a negative impact on the learning (Hartman, 2004). For educational tools and techniques to be effectively deployed they must be appropriate for the educator and student. The educator must have the

capacity to be trained and time to learn how to deliver and work with the educational tools and equally the students must be receptive to them (JISC, 2015). With due consideration for the outcomes required and abilities of the educators and students, a blended learning approach can be used to enhance learning and develop digital teaching and learning skills.

Interactivity for Engagement

Interactivity and engagement are terms that can be used interchangeably, however, there are different perspectives on the development of exchanges to create an environment for learning. Thurmond and Wambach (2004) point to the importance of the reciprocal exchanges of information and interaction with course materials that enhance knowledge development when discussing engagement:

“The learner’s engagement is with the course content, other learners, the instructor, and the technological medium used and results in a reciprocal exchange of information. The exchange of information in the learning environment is intended to, and hopefully will, enhance knowledge development.”

Engagement can be captured in psychological conditions including motivation, attention, interest, effort, enthusiasm, feeling, empathising, etc. and interaction evidenced by physiological activity, e.g. participation through presence, gestures, expressions, moving, contact, reading, speaking, looking, group formation/social involvement and positioning etc. All of this activity can help to bind and develop learning and/or create an appreciation of some of the events taking place. Mandernach (2012, p. 2) defines engagement within learning as, “The amount of physical and psychological energy that the student devotes to the academic experience” and also suggests engagement within assessment can be considered multifaceted. The link between the physiological and psychological interfaces of learning development is schematically presented in Klob’s learning cycle.

When designing the curriculum, consideration should be given to the potential interactive nature of the learning environment and potential cognitive impact. Student engagement needs to be with both the materials, curriculum and others active in the learning environment, to realise

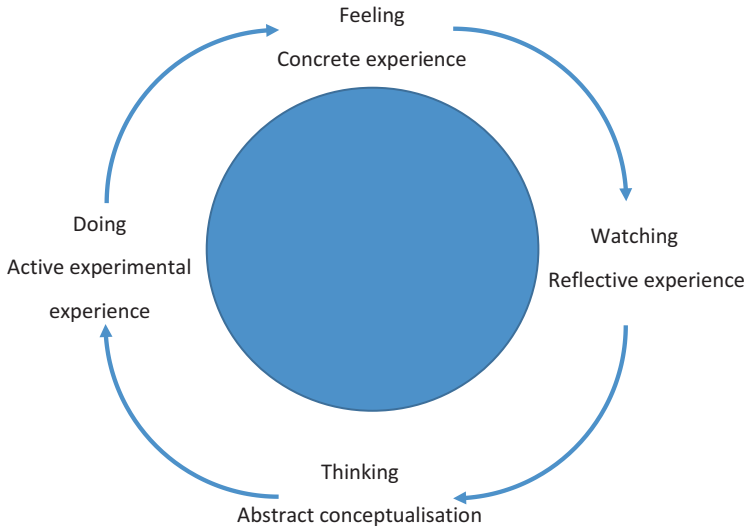


Fig. 2.4 Kolb learning cycle

the potential benefits of the experience. Kolb's learning cycle (Fig. 2.4) is useful when considering how the learner can be immersed in learning through action and engagement. The cyclic theory to development offers a useful systematic approach to the development of teaching and learning, iteratively doing, observing, reflecting and revisiting the things we do.

Effectiveness of a Learning Environment

A comprehensive model to define, assess and measure the effectiveness of blended e-learning does not exist. Understanding the learning that is taking place requires continuous observation and reflection, making use of key points assessment and the collection of data from suitable metrics. Such data are useful to demonstrate where the teaching and learning is effective and where further work is required. Feedback through observation of the learning process should be captured through the interactions and engagement, recording of key milestones and other metrics deemed useful to assess and inform performance. Some of the tools used to assess or the learning process and its effectiveness are: RAIQ rubric (used for

assessing interactive qualities of distance learning courses), pre-test & post-test, final grades, post-course survey and educator or student feedback.

Frameworks for Professional Assessment

The importance of assessment for learning and assessment of learning has relevance for educators in the design of their assessment strategies. Assessment of learning is where accountability for purposes is paramount; its function is to determine a student's level of performance on a specific task. The information gained is used in reporting and is purely of a summative nature. However, assessment for learning, on the other hand, acknowledges that assessment should occur as an integral and regular part of teaching and learning; the information gained from assessment activities being used to shape the teaching and learning process. The work of Gibbs and Simpson (2004), Bound (2010), and Cozzens (2017) provide insight where conditions under which assessment supports learning. In summary:

- Assessed tasks are provided for students to make effective use of study time.
- Learning environments are appropriate to educator skills and student developmental capabilities; aligning with profession outcomes.
- Where possible, the environment accommodates different learning styles, but does not limit learning enabling development in tasks that may be challenging for individuals.
- Tasks are oriented by priority, effort (time and importance) and relevance.
- Key points of socio and task based engagement are embedded.
- Assessment has clear expectations, points of success and marked achievement to promote development beyond current knowledge and skill level.
- Feedback is provided, often and in sufficient detail to allow recap and development.
- Feedback focuses progress, providing information on student performance, learning and actions.

- Feedback can be student controlled, providing information on their actions, responses and behavior. Students can be empowered to judge what constitutes good progress.
- Feedback is timely, enabling formative correction prior to summative assessment.
- Feedback is appropriate to the purpose of the assignment and success criteria.
- Feedback and its use is monitored ensuring it is received and attended to.
- Feedback is acted upon by the student.

There are several established frameworks for assessing the quality of an online curriculum, but few of these frameworks can be used to evaluate a curriculum from a pedagogical perspective (Attwell, 2006). As suggested by Attwell (2006), the biggest challenge to assessing the quality of an online curriculum is the observation, capture and measurement of all possible variables. Practically, the task of measuring all components, tools and external factors is challenging, if not impossible. Nevertheless, a focus on key components and reflection of impact is important, furthermore:

It is quite clear that education in the 21st century presents challenges to quality assurance that were unimaginable just a quarter century ago. E-learning in particular, with its ability to render time and place irrelevant, requires that we abandon traditional indicators of “quality” such as “contact hours”, “library holdings” and “physical attendance” among others in favour of more meaningful measures. (Pond, 2002, p. 1)

Many scholars advocate standardisation to create consistency in the delivery of online curricula, but they also emphasise the importance of maintaining quality, ensuring the delivery addresses the required outcome. The dilemma of trying to standardise while tailoring the delivery to the student and required outcome may explain why there are many criticisms of online curricula. As Manzo’s (2002, p. 38) observed: “few of the [digital] products lived up to their potential”. Attwell (2006) admits that one of the limitations when creating an effective hybrid and online curriculum

is the number of variables that impact its delivery. It is inevitable that those designing the course will concentrate on some aspects of the programme more than others. Regardless of the approach, feedback and metrics that indicate progress and suitability of delivery should be collected continuously and used to improve the learning environment. Research shows that student satisfaction with an online course is a useful metric which cannot be overlooked (Uskov, 2010); without satisfaction and cognitive stimulation, engagement is unlikely. Engagement is integral to the effectiveness of the online courseware or curriculum.

Principles for Successful E-Learning

Anderson and McCormick (2005) offer tips on creating an effective e-learning environment under key areas:

- Curriculum
 - Pedagogy should be matched and aligned to the appropriate curriculum through clear objectives; with relevant content covered; supported with appropriate student activities that match the nature of the assessment.
- Inclusion
 - Pedagogy should support inclusive practice. Provide different types and range of activities and achievement; use the e-learning to support different physical abilities and attract different social, societal and gender groups, which can more readily be accommodated in different frames of e-learning.
 - Pedagogy should engage and motivate learners. Promote an ethos of interactivity.
- Effective Innovation
 - It should be evident why learning technologies are used and what the advantages are. Technology should not be used to simply replace non-technological approach which achieves the same end as effectively. The pedagogy should be fit for purpose.

- Effective learning
 - Effective learning can be demonstrated in a variety of ways; for example, if students are able to select an approach from a range of different approaches, following one that suits their interests or learning style; some learning environments can be personalised to provide a learner agency, learner autonomy, and/or enabling or encouraging collaboration.
- Formative assessment
 - Pedagogy should provide formative assessments. Providing feedback as the students' progress.
- Summative assessment
 - Final assessments must be valid and reliable; understood by teachers, learners and parents; be able to accommodate range of achievement levels; and should not induce adverse emotional impact on the learner.
- Coherence, consistency, and transparency
 - Pedagogy should be coherent and consistent: the objectives, content, student activity and assessment should complement each other.
- Ease of use
 - E-learning should be transparent in its ease of use.
- Cost effectiveness
 - Technology solutions should be justifiable, affordable and sustainable.

E-Learning Case Studies

Incrementally over more than a decade, the authors have introduced various digital resources to help delivery, stimulate interaction and engage students in different methods of learning. Recently, courses have been created to support independent learning at a distance, however, wherever possible a blended delivery is preferred. While educators may prefer

face-to-face and blended delivery, for some learners physical and geographical barriers prevent traditional face-to-face delivery.

Initially the authors created digital content for information that offered a different approach to the paper based and traditional classroom approach, providing surveying tools that attempted to replicate surveying teaching, while engaging learners with greater interactivity (see the Virtual Site case study below). This method sat alongside existing teaching materials, but has also been used by others, offering remote learning.

Other tools have been created which have enabled educators to effectively deliver the same content to students using face-to-face, blended and online methods. Some brief insights into practice are offered below. As can be seen, on the whole, the case studies offer enhancement to the curriculum and have not been undertaken to replace any existing practice. Where the curriculum is supplemented in this way the approach is carefully considered, designed to offer additional resource without confusion.

1. Virtual Site: A Case Study in Online Learning Resources

Virtual Site is a project that makes use of graphics software and hardware technology to create a virtual interactive construction site. Interactive e-learning tools are developed to assist with the teaching and learning of key skills, principally as an aid to first-year teaching on courses at Leeds Beckett University, including Building Surveying, Quantity Surveying and Civil Engineering. Modules include some basic surveying techniques and a levelling exercise which involves the transfer of a level from an assumed bench mark to establish a temporary bench mark some distance away. Dickinson, Green, Smith, Bown, and Gorse (2008) reported that in spite of a careful introduction and explanation of the use of the instruments and techniques, many students find it difficult to visualize the surveying and construction processes. To address these issues, tutors decided to trial an additional, concurrent, method of delivery and learning, by creating a virtual levelling exercise. This enables students to take readings of the survey stages via a series of panoramic photos and mocked-up views through the eyepiece of the level (Fig. 2.5).

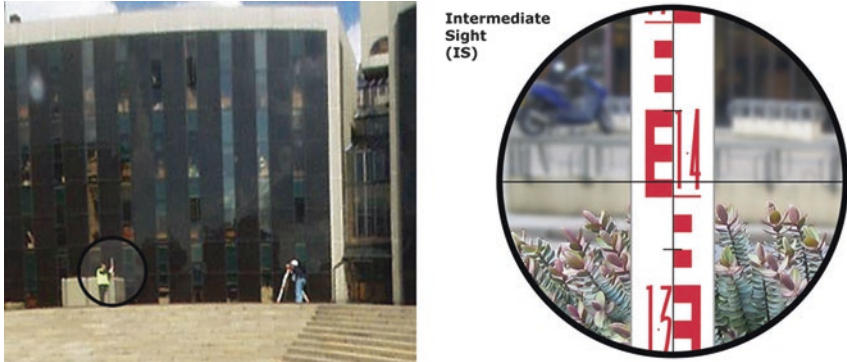


Fig. 2.5 Virtual levelling exercise

A first-year BSc(Hons) Construction Management student commented, “You can do this as many times as you want. If you don’t understand something you can go back and do it again. The tips are very useful. If I was at home with this, it has enough instructions for me to know how to read the foresights, backsights, etc., plot it onto the table and do the work without any help. It is designed well and is very realistic.”

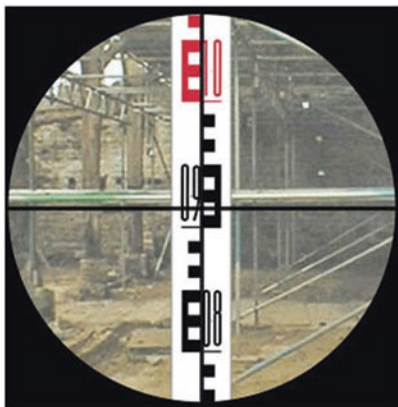
On seeing the virtual levelling exercise for the first time and referring to her experience as a first-year student, a final-year student said, “I remember going to one of the tutors and falling apart because I didn’t know how to do basic levelling, so this would have been really helpful. It’s a brilliant tool and I think the first-year students are very lucky to have it. When you’re new to it, levelling surveys can be mind-bogglingly confusing.”

Ellis, Dickinson, Green, and Smith (2006) observed that tutors’ reactions have been favourable. The resource has been embedded within module teaching. In particular, tutors were keen that students gained practice in reading staff levels and that emphasis had been placed on ‘photo-realism’. However, one tutor had used the exercise in a group session, which he believed to be more beneficial, stating, “Working at the PC can be very lonely for a student. It [the surveying exercise] seemed to work better in class, as it promoted a lively discussion. Whilst I have no evidence to back this up, I think that some of these students went back to the exercise after class and gained more from it.” In these reflections, it is the interactive nature of the activity, the ability to either engage as a group or individual and to recap and reflect that is seen as the advantage.

2. Virtual Maths

At Leeds Beckett University we seek to assist our students in their learning of maths with our Virtual Maths online teaching resources which enable students to learn at their own pace. Students who may be embarrassed to admit to a tutor that they are struggling with maths can use the exercises to catch up in private study. A step-by-step approach is used to unravel complex problems. Backwards and forwards control enables students to retrace steps, allowing for greater comprehension and understanding. A theodolite exercise (Fig. 2.6) enables the student to calculate the height of a building by taking a series of readings and then using basic trigonometry to make a final calculation.

A BSc (Hons) Construction Management student commented on her use of the virtual theodolite exercise, “I liked the height calculation



We align the theodolite view to horizontal, then focus onto the staff.

What is the staff reading?

- 9.5m
- 0.915m
- 0.95m

Check Answer



What is the angle?

- 144 degrees
- 156 degrees
- 36 degrees

Check Answer



Fig. 2.6 Virtual theodolite exercise

exercise. It's like revision, taking you through the steps of how to do it. Having something that's easy to look at and tells you how to use your adjacent and hypotenuse and reminds you which angles are necessary, without having to find a book and look at equations [is useful]. It pops out at you and stays in your memory.”

3. Heat Loss Calculator Android App

In 2016 Leeds Sustainability Institute at Leeds Beckett University released an educational app for android devices. Its purpose is to help students and professionals explore the potential energy efficiency of different building element fabrics. The Heat Loss Calculator introduces the concept of calculating heat loss from the varied materials used in house building (Fig. 2.7). The aim of the app is to quickly calculate building heat loss and how much various insulation improvements could potentially reduce it by reducing U-values.

The app features a user guide in which terms used in the calculations are explained and links are given to the relevant UK Building Regulations and teaching resources.

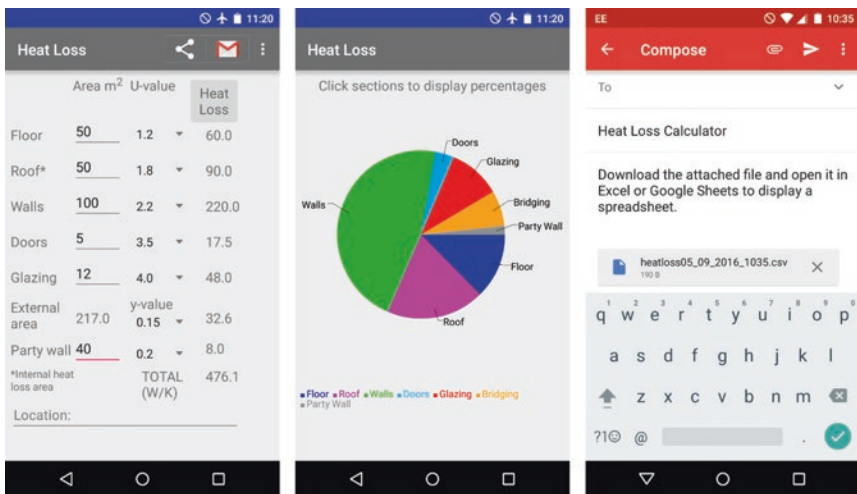


Fig. 2.7 Screenshots of the Heat Loss Calculator app

The app was designed for surveying researchers and students who have knowledge of U-values, so that they can enter an appropriate value from their knowledge of building construction. There is a link provided within the app to the UK Government document ‘Conservation of fuel and power: Approved Document L’, which states building regulation in England setting standards for the energy performance of new and existing buildings. The various documents linked to from this web page give U-values for the wide variety of building materials used in dwellings and non-domestic buildings for both existing and new-build construction.

Ownership of Android Devices Among the Student Group

A presentation of the app was made to the student group. It was found that of the 15 students who attended the lecture, only two had android devices. The rest were using iPhones. This is surprising, as according to Gartner (2017), a leading information technology research and advisory company, Android held an 86.2 percent share of the worldwide smartphone market in 2016, whereas Apple held a 12.9 percent share (Table 2.1).

A way to give access to the app for those who do not have android devices is to use the Bluestacks android emulator, which can run on a computer running Windows or Apple operating systems. However, this is not an ideal solution as using this method requires the user to either have a laptop with them while they are performing the building survey, or otherwise they would have to make written notes of the dimensions of

Table 2.1 Worldwide smartphone sales to end users by operating system in 2016 (thousands of units)

Operating system	2016 units	2016 market share (%)	2015 units	2015 market share (%)
Android	296,912.8	86.2	271,647.0	82.2
iOS	44,395.0	12.9	48,085.5	14.6
Windows	1,971.0	0.6	8,198.2	2.5
Blackberry	400.4	0.1	1,153.2	0.3
Others	680.6	0.2	1,229.0	0.4
<i>Total</i>	<i>344,359.7</i>	<i>100.0</i>	<i>330,312.9</i>	<i>100.0</i>

Source: Gartner data source 2016 (accessed 2017)

the building and input them later into the Bluestacks emulation of the app. The ideal scenario is to rebuild the app for the Apple mobile device operating system, iOS, by rebuilding it in XCode.

Online Survey

An online survey was created to obtain feedback from students. A demonstration of the app was made to a group of 15 students, who were then invited to complete the survey. This produced four responses (Table 2.2).

Table 2.2 Survey responses

<i>Did the app enhance the written guidance in the module document and on MyBeckett (the University's Virtual Learning Environment)?</i>	<ul style="list-style-type: none"> • Somewhat, it clarified how to use it more. • Definitely, the written document was much easier to follow and understand after the app was used. • Gave me a greater understanding of thermal bridging in accordance with plane elements.
<i>Please evaluate your experience of using the app.</i>	<ul style="list-style-type: none"> • Further explanation within the app of what the roof area encompasses, as well as what the external area is, before the calculation this is confusing as you think you need to enter an amount. • Easy to follow, straight forward and simple. Quite difficult to find and install if you're not on android. • It's easy to use and downloading the app was straight forward.
<i>Did you experience any difficulties in installing or using the app?</i>	<ul style="list-style-type: none"> • Yes, it wasn't easy with Bluestacks. • Quite a long process installing the app for non android users. • It's easy to use and downloading the app was straight forward.
<i>How could the app be improved?</i>	<ul style="list-style-type: none"> • More choice of u values. • The app is good, I just think it could look more aesthetic to the eye.
<i>What developments might you or others find useful?</i>	<ul style="list-style-type: none"> • More u values • Change of resolution, the page looks too busy.

The responses were generally very brief and did not give a great deal of insight into the students' experience of using the app. We plan to perform structured interviews to produce a better student response.

The work demonstrates the challenge of creating digital content that is suitable for a cross-section of students. It is for the reasons outlined that care must always be taken when developing online resource and embedding into the curriculum.

4. Offering Alternative Delivery Methods: Face-to-Face, Blended and Online

The work undertaken by the authors which has offered greatest insight into the blended curriculum, was that undertaken by Cozzens (2017). Three delivery methods were used, all supported by digital content. The modes of face-to-face, blended and online learning were used to deliver the same Engineering curriculum. Student motivation and interest was found to be the greatest influence on success, however, all programs were successfully delivered.

When online, Cozzens (2017) used digital tools that allowed the tutor to be seen by the student and for the tutor to see both the students and their desktop. Digital tools were used to engage the learner, while the educator was able to engage with the group or individuals, when they needed help or wanted feedback, other than that which was provided by the digital tools.

Cozzens's also assessed the learning styles of the students as they worked through their course and explored this against their performance. It was clear, through observation, that some students and their attributed learning styles suited specific delivery methods and tools more than others, although a student's motivation and attitude was found to be as dominant when measured on their ability and to complete the course. A student's perceived intellectual ability, as well as their learning styles and beliefs influence their use of learning strategies, learning effort and response to failure or setbacks (Stump & Husman, 2014). The situation is complex and the literature, as previously discussed, demonstrates that there are many factors that affect the learning environment which need to be considered, thus, having a better understanding of the learner, learning context and culture should benefit the learning experience.

Conclusion

From our experience of developing and implementing online teaching resources, the general consensus of feedback received from students is that they benefit from using them as a form of revision and reinforcement of learning that has taken place in the classroom and in practical tutorials. This raises questions about the suitability and efficacy of e-learning for the purely distance learner. Perhaps the ideal scenario is to introduce e-learning tools in a classroom group session, as suggested in Ellis et al. (2006). Care should be taken to always test tools and receive feedback, some tools require prior knowledge and experience before they can be used and are not appropriate for all.

The use of smart phones to access online learning resources presents difficulties for the developer. The fact that Flash is no longer supported on mobile devices means that many resources can now only be viewed on computers. The two dominant operating systems in the mobile device market, i.e. Android and iOS, require apps to be written in different development software and in different computer languages (Java and XCode respectively). This entails duplication of significant amounts of development work.

The review and case studies provide an overview of some of the key factors to be considered when developing an online or blended learning curriculum. As the digital age unfolds, the potential of what can be achieved through the new medium will inevitably take education and training to a different place, however, it is wrong to assume a digital environment is a superior and intelligent one. Educators always need to consider how they design and administer the curriculum to ensure that the learning environment is engaging and effective.

Developing Teaching and Learning: An Evolving Educational Environment

We must recognise that educators are constantly responding and adapting to the changing education environment. The opportunities that new technologies present often come with unexpected limitations. Emerging

technologies, by definition, have limited maturity; using these tools in education is not without risk. New tools can offer more than can be provided in the traditional classroom setting, although their use should be approached with care. Online technologies enable remote communication, with multiple avenues for interactivity that bring different digital content into the environment to stimulate and engage learners. As these new tools emerge, educators are tempted to adopt them into their learning and teaching. Yet, in doing so they need to consider how these tools add value to the student experience and whether they can support existing learning or develop new methods of delivery, at least as well as traditional methods. The effectiveness of new tools and methods are frequently dependent on the supporting infrastructure, technology and the digital capabilities of the educator and learner.

When introducing new technology, everyone involved in the learning process should be considered; a holistic approach should be adopted (JISC, 2015). Learning programmes need to be designed with wide and appropriate consultation to help open up the design decisions and to enable the new programme to selectively move forward, without unduly restricting the design and the introduction of a modern curriculum. Educators should develop educational experiences in line with advances of education (where this is underpinned by empirical research), for their course or program to remain relevant and credible to the modern world. Educators have to (re)design learning programmes and experiences with care to help ensure they do not fall into the trap of using a tool for its own sake. A questioning mind should be adopted, rather than ‘Here is a new tool, how can I use it?’, it may be more appropriate to take the line ‘I need to maintain pace with current technology, possibly do something revolutionary, what tool can I adopt or adapt to improve the learning environment and outcomes?’

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3

Simulating: Bridging the Gap Between Practice and Theory in Higher Professional Education

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Introduction

Since Antiquity, the task of bridging the gap between what is considered theoretical and practical knowledge has troubled the world of teaching and learning (Daly & Higgins, 2011). This is especially true for higher professional programs, which typically rest on different forms of knowledge that must become integrated to be applicable in different work contexts (Markauskaite & Goodyear, 2016). Doing simulations in different shapes and forms has been introduced as one way of making students connect between what is learnt in classrooms and what is applicable to

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practical situations. The classic introduction to “Simulations and gaming in education”, states that “[i]t is in order to bridge the gap between theory and practice, the unnatural dichotomy of the colleges of education, that simulation was introduced into training” (Tansey & Unwin, 1969, p. 31). Although extensive research has examined simulations as contexts for learning, the way these can be used to enhance quality practice in higher professional education needs further consideration. This chapter draws on three case studies of higher education courses conducted as part of a larger research project in Norway. These cases had important elements of simulation in their curriculum as part of their nursing, law and management studies. The questions guiding our discussion are: *How are simulations designed and used in these courses, and in what ways do they serve to bridge the gap between theory and practice?* The chosen cases display risks and promises the use of simulations brings to teaching practices in higher education via high-fidelity human simulation and roleplay.

Simulations as Quality Practice in Higher Education

Simulations are presented as an activity aiming to bridge the gap between ‘practice’ and ‘theory’ where different knowledge fields are combined. According to Rall and Dieckmann (2005), “Simulation, in short, means to do something in the ‘as if’, to resemble ‘reality’ (always not perfectly, because then it would be reality again), e.g., to train or learn something without the risks or costs of doing it in reality” (2). Simulation in higher education can vary in forms, differing from low or no technology roleplays, high-fidelity manikins for health simulation or affordable stand-ins for material features of practice (Hopwood, 2017). Quality simulations are a result of, according to Jeffries (2005), the character of the teacher interventions, students, educational practices and simulation design characteristics. How teachers prepare students, provide them with material and supervise the simulation go together with how students are prepared and able to exploit the simulation experience. The quest for making students more active in their acquisition of knowledge, skills and ethical

competencies was well described in Shulman's rendering of the taxonomies of learning in higher education (2002). Organising the teaching so that students are motivated and engaged, getting to know more of the subject, being trained in performing on the topic, reflecting on and promoting judgement—which, in the end, results in commitment and the formation of an identity—are all steps on a ladder of accomplishments that is much focused in the literature on gaming and simulations. In the current Norwegian debate about quality improvement of higher education, simulations are addressed as possible aides to enhance such dimensions of quality as authenticity of learning situations, theory/practice alignment and training in secure environments. For the areas of health, law and management, we can identify such quests for quality in the public debate. A reform in Norwegian healthcare in 2013 sparked a review of how quality issues are handled in the training of health professionals. The report clearly indicates great potential for games, roleplays and simulations in making links between theory and practice and describes them as important transitional tools for creating authentic situations for teaching in the *medical* domain (NCHE, 2016, p. 9). Similar concerns have been raised in other domains, for instance by the national committee producing the white paper "The Lawyer in Society" (NOU, 2015: 3, pp. 131–133).

In simulation training the challenge is to identify or reinvent learning situations which resemble "the authentic" context in order to promote authentic learning (Tanner, 2004). According to Rule (2006) such situations are recognised by (a) being rooted in reality, (b) involving inquiry and thinking skills and (c) being conducted in a community of learners who (d) experience empowerment through the learning process. The quality of the script and the authenticity of the persons acting are often pointed at as crucial for the experienced realism (Reid-Searl, Eaton, Vieth, & Happell, 2011). Keskitalo and Ruokamo (2016) report that students generally experience simulations as "meaningful learning" and measured how students assessed their learning outcomes favourably according to a set of criteria that reflected individual and collaborative learning processes pertaining to different objectives.

Research also indicates that students best exploit learning opportunities if they use skills such as engaging themselves emotionally and

cognitively, understanding contexts and frameworks, being prepared and able to handle the technology available and are able to communicate in the situation and use fair critique and probing questions as opportunities to develop their thinking (Tosterud, 2015a, 2015b). Obviously, some students are less able to step out of conventional roles as receptive and disengaged students, which, according to a study by Croxford (2001), was typical of the “ordinary Norwegian students” in higher education. The following cases might suggest otherwise.

As Harwood (2010) and Labaree (2006) point out, the concerns over connecting theoretical knowledge and the practical world have had strong advocates and do not cease to influence debates in higher education. They complicate the question by asking what “type of theory” and what “kind of practice” come into play. One might say that there exists a perennial duel between “physics envy” and practical relevance, which is a dilemma in most professional studies (Colley, 2003; Thomas & Wilson, 2011), and that simulation is a remedy for rejoining the two. This is, among other things, related to opportunities to practice skills and work with procedural knowledge as it unfolds in situ. Schaffer (2012) says that:

A key question for the design of games for learning has to be: “What are the mechanisms by which one experience influences another?” The premise of education writ large is that it is possible for experience to transfer—in this general sense—from one context to another. Otherwise, there is no education, in games, in school, or anywhere. (2012, p. 403)

Simulations also have the potential to realise other aspects that are important for good teaching, such as building on students’ previous experience and making conceptual knowledge “actionable” in professional practice. Markauskaite and Goodyear (2016) suggest that professionals today need to develop “epistemic fluency” to activate and make use of different kinds of knowledge in different situations. In simulations all learnt theories, ideas and dispositions come into play as “fluid” situations before students start to navigate and find their way. Gresalfi and Barab (2011) argue that games that use immersive and interactive narratives move students to reflect differently about the subject they are engaging with, and that several dimensions of the subject knowledge: the procedures, the concepts,

the consequences of actions taken and last, critical thinking, become active epistemic elements of a potentially successful simulation.

In the sections that follow we present three variations of simulation activities in higher professional education and their potentials for supporting student learning by integrating theoretical/conceptual and procedural knowledge. The examples are taken from the larger research project *Quality of Norwegian Higher Education: Pathways, Practices and Performances*,¹ which included case studies of educational practices in a set of higher education courses (Nerland & Prøitz, 2018). Instructional practices and learning activities were documented by means of participant observation, video observations and interviews with teachers and students, and supported with course documents and evaluations. We present the cases in a narrative form, focusing on how the simulation activities were enacted and experienced by students. We then use these examples to discuss aspects of quality practice in simulation pedagogies.

Case 1: Simulating in Nursing Education

Modern simulation in nursing was spurred by the invention of “Resuci-Anne”, which the Norwegian Åsmund Lærdal invented and greatly improved for use in training for resuscitation around 1960. The development took a leap when computers were set to regulate the responses of the manikins. This new context gave openings for modernising medical education in the direction of more problem-based learning and explains some of the expanded use of simulation in medical studies (Bradley, 2006).

The simulation practice in nursing studied here is part of the course “Guided practice in clinical nursing”, and the desired learning outcomes stated in the course plan are in the knowledge domain of factors affecting the basic needs of the acutely, critically and chronically ill with surgical

¹ The project is financed by the Research Council of Norway (2014–2017) and is led from the research institute NIFU in collaboration with the Department of Education, University of Oslo. More information about the methodology and findings from the case studies is available in Nerland and Prøitz (2018).

disorders as well as knowing the operating room workspace. In terms of skills the requirements include participation in nursing actions in accordance with sound and evidence-based practice. In addition, reflection on personal and professional development, collecting documentation and reporting about critical matters are also required. In the general competency domain, the students are expected to engage in academic and ethical discussions and develop the capacity for cooperation and ethical conduct. The simulation takes place in year two, second semester, and is an integral part of the practice topic offering 15 ECTS points. The students have spent two weeks in a hospital together with the same practice advisor. The group observed consist of part-time students doing their three-year BA in nursing over four years.

The students have had access to the information on the case for simulations for one week before starting the two-day session. Information about the illness and condition of the patient is described on a sheet. The case has been selected by the teachers from a database written by experienced teachers. The cases have been tested and acted on before by other students and have been adjusted to their second-year status. The supervisors organise a two-step introduction before entering the simulation room and then in the simulation room. The roles of “facilitator” and “operator” are clarified. Two students have been selected as operating nurses, and the remaining students return to the reflection room, watching the simulation on a large screen. The facilitator remains in the room, with a headset, while the operator has returned to the operation room and assumed the role of a patient. The manikin is in a hospital bed and is an interactively connected representation of the patient, with the operator giving voice and dramatic flair to the experience of the patient.

The students take roles as leading nurse and assisting nurse. The leading nurse speaks loudly and clearly and asks the patient numerous questions throughout the examination, such as “Are you comfortable now, Mr Hansen?” The operator provides his opinions, expresses his sense of or lack of well-being and comments on the adjustments and actions taken by the nurses. The student nurses actively address procedural questions and focus on the order and sequence of things: measuring blood pressure before raising the body to a higher position, checking the amount of painkiller according to weight and temperature etc. The nursing students

have huge respect for the simulation situation, and they prepare for it with great care and suspension. Although the teachers carefully describe the value of not only “doing the right thing” but also that of taking dubious or wrong decisions in front of fellow students, the students only partially accept this argument. The rumour goes that at one time the operator let the patient die, and they hate that idea.

The facilitator is not altogether “invisible”. She responds when asked: “...where is the painkiller?” and whispers the directions. She can also slip into the act by being “the doctor” the nurse calls up to consult on a certain medical detail. The leading nurse speaks explicitly and addresses the patient actively and announces the next steps in the procedure, continually checking on his status. The remaining nursing students in the adjacent reflection room listen and comment while the nursing precedes, sometimes proposing “I would have...” or correcting “the temperature has already been stated”. The nursing teachers are concerned with finding the right balance for students between feeling taken care of during the simulation and yet keeping up the suspension and tantalising openness and challenge of facing the unknown. The risk of following the wrong track, confusing the procedure and revealing incompetence in front of fellow students are factors the operator and facilitators dwell on when they enact their roles. They negotiate whether, when and how to intervene, to assist students and to make them more eligible to learn with the proper levels of stress. The script is followed, and the operators and facilitators improvise but watch carefully how much they can deviate and try to mark the secure way to success.

After 15 minutes the simulation is called off, and the students gather in the reflection room. The facilitator and operator join them and then start the reflection sequence. “You are a good actor!” is a compliment presented from one of the students to the operator. They follow a scheme called the ABCDE, where they check their procedure point by point. The facilitator asks questions continuously and receives replies from the nurses while the spectating nurses are invited to fill in or to rephrase. Some questions rehearse the drill, while others dwell on which choices were made and how a different choice might have produced different results. The facilitator gives much positive feedback, such as “this sequence was elegantly performed” and “you were thinking so right”. Criticism is

offered delicately. The pace is fast, and the debriefing is over in 15 minutes.

Some questions in the debriefing are related to the sequence and drill described in the ABCDE, and the students are encouraged to make the connections with what the drill describes and what actions were taken. Other questions are more open-ended and appeal to the imagination. The facilitator and operator refer to accepted practice and sometimes to their own experiences as well as to research findings. The suspense of meeting the teacher's expectations is high, and the students are sitting on the edge of their chairs. They do not use a playback of the recorded session to check more closely.

Case 2: Roleplay in Management Education

Management education in Norway has been a target of critique for its academic drift and the need to regain a practical and professions-oriented purpose (Jørgensen, Skyttermoen, & Syversen, 2013). Management training in higher education dates its use of games and simulations back to the late 1950s (Keys & Wolfe, 1990) and became widespread with the use of increasingly more sophisticated computers and software. The simulation practice we followed is part of a course called "Basic personnel management" and a program in management and leadership (7.5 ECTS points) in the second year. This specific course includes core areas related to management, recruitment, motivation and reward of staff according to the objectives of the organisation. The focus is on the individual employee and how a unit of Human Resource Management can support the learning trajectories of the employees. An applied practical perspective (a "pracademic approach") is stated as the basis for the entire program.

The practical task of the simulation was to interview two applicants for a fictitious position based on application letters all students had to submit in advance. Each group needed to decide on who would take the role of interviewer and who would be the note-taker. Interviewees were from other groups in the same cohort. The whole session was organised in 30-minute slots, in total 3.5 hours, as follows:

1. 30 minutes introduction in plenary
2. 30 minutes preparation for the interviews to decide division of labour and questions for the applicant
3. 30 minutes for the first interview
4. 30 minutes for collective reflection on the experience and feedback on the interview from the observatory
5. (3 and 4 were repeated for the second interview)
6. 30 minutes discussion on the whole process

After the session the groups wrote a written report based on their experiences and sources in syllabus.

Most students seemed very engaged in the activity. Some students had a double role during the day, acting as both an applicant for the position who is being interviewed and also having a role in interviewing a peer student. The students who took on this double role expressed that they were nervous when talking to their peers in the morning. Some students were very well prepared for the simulation, for example by having printed versions of the interview guide and having read the applications for their candidates carefully. Some groups enacted the session exactly as designed by the teachers, while other groups spent their time differently. This was particularly visible in how much effort they put into the final phase of this task, which was devoted to giving feedback to one another on their performance as an interviewer. In some of the groups the interviews were conducted as if they were real situations, but there were also examples of situations where the students did not manage to act seriously in their roles. In one particular case, the “applicant” (who, according to the application text, was supposed to play the role of an experienced human resource manager with a wife and two children) did not manage to stay serious. He laughed and made fun of the situation, which ruined parts of the session. In the discussion afterwards, the groups were supposed to establish thorough ground for their ranking; however, the groups varied a lot in how they drew their conclusions. The groups that were well prepared for the session typically defined a set of criteria for the applicant needed for the position, and, based on a thorough discussion related to each of the criteria, they ranked the two candidates. However, our data

also revealed examples of groups who took the whole session less seriously in addition to the final discussion about the ranking of the candidates.

Even though there was variation in how seriously the students enacted and prepared themselves for the simulation, the body of students as a whole underscored that this particular activity had important outcomes. They gave several reasons, which can be summarised as follows: Firstly, they learned a lot from the practical arrangement of enacting the whole process of appointment. The students perceived the exercise as realistic and found it useful to be on “both sides of the table”. The experience made them reflect upon elements that they had not thought about earlier, such as how much work it is to prepare this process properly or how complex the interview situation can be. One student stated: “It was clearly demonstrated to show how complex the situation was and how difficult it is both for the interviewer and the candidate to simultaneously behave normally as you focus on all the other aspects needed in the situation”. Secondly, it was useful to get experience with being in the role of interviewing another person. Thirdly, it made the students more conscious in regard to how to act in both roles, and they also realised how biased one can be in approaching such a situation. They explain that they had decided who they would give the job to in advance; however, during the interview, many of the students started to doubt their first supposition. In the discussion after the interview they found it interesting to see the high degree of diversity of interpretations among the students that had been in the same situation. Fourthly, they noted that this was an assignment where you could apply a lot of what you have read in the syllabus.

The students found the final part of the task challenging, and the unanimous opinion was that it was particularly difficult to be critical in their responses to one another. However, most students thought it was useful to hear how the other students considered their performance. As one student said, “I was made aware of things that I did—that I did not know that I did”.

The management teacher was not involved in the roleplay but had prepared the students beforehand and provided the students with scripts for how to enact the roleplay. Each student brought an application for a fictitious job and was supposed to be serious about trying to get it. The teacher explained that students are always surprised when they begin this

task. And then, as soon as they start working on it, the activity becomes an eye-opener. She states: “Both being an interviewer and an applicant gives important learning. It is demanding, but all students have interesting reflections afterwards, particularly about the importance of being well prepared for the situation”. Engagement and the collaboration are important for all students, she underscores, and it is an important part of the exercise that they repeat the whole procedure a second time. She explains, “If their preparations are not good enough, they will not succeed, and that is an unpleasant experience. That is why it is so important to repeat the task. The second time is a new chance; they prepare themselves well for the second round, and that stimulates important reflections”.

Case 3: Simulation of Courtroom Hearings in Legal Education

Simulation training has a long history in law education. So-called “moots” or “mock trials” were used in formal training as early as 14th century England, and such training was well established in the centuries to follow. Mooting is here considered as written or oral presentations of legal arguments against an opposing party and in front of a judge, closely resembling “real” courtroom appearances. Its use is widespread in the US, where “mooting” has survived as the dominant case-method of American law education (Daly & Higgins, 2011).

The simulation in the criminal law case was a part of a course termed “Criminal law in new clothing”. The learning outcomes in this course stated that students were expected to have the “knowledge, skills and general competencies needed to work as legal professionals in public or private positions as legal practitioners”. To achieve this, the course arranged procedural seminars where students acted as participants in courtroom hearings. The aim of this activity was to develop an understanding of how to approach, structure and present a legal argument in a realistic courtroom setting.

The procedural seminars assigned students as counsellors and prosecutors, simulating legal hearings. Student prosecutors and defenders were

given anonymised cases from previous convictions, adding additional realism to the simulation. The students were also presented with a range of legal documents in a realistic manner, stretching from police-hearings, health providers, witness statements, social care providers etc. These documents were presented two to three days prior to the hearing, which is a realistic time-frame for preparing court-hearings in real life. Prior to the procedural seminars, the students were introduced to theoretical principles of criminal law and writing courses drawing on similar cases as well as field trips observing real courtroom hearings. Lectures and seminars on judicial issues also introduced the students to relevant disciplinary content prior to the simulation.

The simulation was arranged with students taking roles, respectively, as prosecutor and defence within the physical surroundings of a realistic courtroom. While the students acted as defence and prosecutors, the lecturers acted as judges. In addition, an external lecturer took part as an observer. The simulations were based on the following role structure:

- Teacher 1 (judge)
- Lecturer 2 (observer)
- Student 1 (first prosecutor)
- Student 2 (second prosecutor)
- Student 3 (first defender)
- Student 4 (second defender)

The rest of the students in the seminar participated as audience members and wrote the final judgement following the hearing. In this way all students participated actively in the process although with different roles and purposes.

Before the simulated hearings, the prosecuting students were given two days of preparation. This preparation was organised as mandatory group work, with students and teachers collaborating similar to a work-like situation. This collaboration was intended to resemble a work-like handling of a criminal case prior to a hearing. The physical surroundings, time-frames, rules of procedure and collaboration was thereby framed realistically. The teachers acting as judges and the external observer commenting on the students' presentations also provided for several

feedback-angles on the student's performances. Firstly, they received feedback through the counter-argument from fellow student-opponents as a response to the initial statement. Secondly, the external observer commented on the students' performances from the perspective of a representative from public court. Here the students received feedback from a practical courtroom-angle. Thirdly, the course teachers, acting as judges, provided feedback on principal and disciplinary issues in criminal law. In this way the simulations emerged as a potentially rich feedback arena for the students.

The student-experiences from this simulation entailed that the feedback varied somewhat, depending on the "judges" involved. Drawing on interviews following the simulations, the students expressed a wish for more individual and specific feedback as well as clearer and more frank feedback on their actual courtroom performance from the external observer. Most students were also slightly stressed by these simulations. Overall, however, the simulations were considered as a very productive and relevant way to learn about practical courtroom procedures. It was described as a "feeling of being an actual lawyer" and "looking into what their future occupation might look like". The students clearly approved of the challenge and appreciated the involvement of an outside prosecutor. The outside prosecutor, on the other hand, was impressed by the students' performances and their creativity in handling the cases.

A Pedagogy for Engagement

Simulations, games and roleplays are considered as attempts to reduce the problem of making theoretical knowledge useful and meaningful in professional studies. We see in these three cases that they are fitted in as alternative teaching methods in programmes that otherwise rely on conventional methods. They have important similarities: there is a preparation period, spanning between two days and a week, then there is an actual simulation and a debriefing. The pedagogical contexts differ, but they are all introduced by teachers who aim to teach with various methods and seek to alleviate the theory/practice problem. The nursing simulation is highly dependent on advanced technologies and is carefully

drafted and integrated in the tight schedule of a simulations studio. They train in a safeguarded context, with no risk of harming patients. The law simulation and management studies simulation are run with conventional technologies but involve extra specialists (judges and observers) and extra rooms for involving students (management studies)—providing feedback to the involved parties. The law and management studies roleplays demand written work in preparation and debriefing, while the nurses are closely monitored for oral participation during debriefing. Both the law and nursing studies select students to do the simulation, while the rest of the class observes and participates more fully in the debriefing. The management studies roleplay is organised in groups where all students are assigned different roles to perform. All students involved in these simulations expressed enthusiasm about the simulations, claiming they are highlights in the student experience of the chosen programme. They are surprised by their own engagement, emotionally and cognitively, and consider the authenticity and realism as the highest quality of the exercise. The critical comments deal with the question of why they are not offered *more* opportunities like this.

The cases demonstrate that the ability to engage in the situation is important, both as participants and spectators. The “as if” involvement is critical. Students who fail to act their roles gain little subject-relevant knowledge or skills from the experience. Some students enter their role with great enthusiasm and are “naturals”, while others hesitate to immerse themselves. However, making “mistakes” is not rendered as problematic, because they may induce more emotions and opinions and open students’ reflections in debriefing. The students feel vulnerable in the situation because the risk of exposing their lack of competence or insecurity concerns their status in the class and might affect the teacher’s assessment of their performance.

Discussion: Is This Really High Quality?

According to Jeffries (2005), producing effective and successful high-quality simulations depends on the character of the teacher interventions, how the students are prepared and respond, how well the simulation is

embedded in educational practices and the simulations' design characteristics. The three cases reveal different ways of solving the pedagogical demands of a simulation. Still, the students regard the simulations as being realistic and presenting an authentic situation. Relying on the student evaluations, their experience seems to comply with what Shulman (2002) proposed as hallmarks of high-quality learning in higher education. The students are highly motivated during the simulations and reflect and participate in critical discourses involving evaluations and decisions, which promote the formation of a budding identity as professionals. The quality of the experience is related both to how the simulations bring the realism and authenticity to a point where students experience the fluidity of the situation in a caring and daring manner and to how debriefing helps students to reflect upon and connect the experiences to the fluency of the epistemic games that were at play.

The management students are all involved in the roleplay. The law students have six pairs of four students carrying the burden of acting in front of the class, and the nursing students are two students at a time exposing themselves for the group. Involving all students in the same qualitative experience is a challenge with large classes. High-fidelity simulations are more easily provided in designated studios and laboratories built for the purpose, and with less visible technologies and infrastructures it is easier to involve more students in low-tech simulations. However, the critical skills development is more physically demanding—and deemed much more important—in the clinical training of nurses than that in a courtroom or interview room in an employer's suite. The need for debriefings focusing on drill is clearly an important dimension for nursing education as well as engaging students to reach independent, well-argued decisions. Depending on the role assigned to the student the value of the specific simulation or play will differ (Gresalfi & Barab, 2011).

When asking the nursing students if simulation training was a practical or theoretical lesson, they immediately replied: "this is theory" or, more precisely, "this is an exquisite theory lesson". In spite of the emotional engagement, suspense and expressed identification with the actors in the situation, simulation was interpreted as a practical lesson while

still appreciating “practice” as something else. Law students and management students appreciated the strong connection to reality but were never close to thinking: “this is for real”. The paradox is that to enact the “as if” quality, you need to oscillate between states of mind: the cynical and harsh realism as one and the drama and pretensions of an imagined reality as the other. This intermediate reality between what is and what might be is described vividly in learning theories, such as Wolfgang Iser’s duel between the “wandering viewpoint” and “consistency building” (1978) in theories about how reflective practitioners develop expertise and professional development (Eraut, 2008), or “epistemic fluency” (Markauskaite & Goodyear, 2016). While the simulation “script” might be explicit, the apprehension and creativity employed in the intense moments of improvisation put students’ ability to be daring and resilient and to seek solutions when conflicts arise, whether emotional or cognitive to the test (Roberts & Greene, 2011). This is possibly the optimal situation for developing a professional transformation and for connecting contexts in learning. Analysing the situation quickly, comparing with the inventory of established knowledge, choosing the best advice and acting upon it, connecting it to new experiences and later arguing and reconsidering this knowledge form the critical steps of learning a profession in a dynamic theoretical and practical way. We see that individual students approach “as if” situations differently, and this presents new challenges to teaching and learning in simulation contexts. Professional studies attract students with different motives and mindsets, and within groups there is a variety of personal dispositions making students more or less prone to solve key tasks in their future professions. If simulations play a significant role in professional training, a certain competence for performing simulations will be a significant advantage. Small groups of students involved with high-tech simulations, constantly monitored by teachers and fellow students, provide a context where it is difficult to escape the immersive character of the situation. Roleplay in groups without teacher monitoring presents to students the challenges of finding the dramatic nerve to comply with the intentions of the programme.

Conclusion

At the beginning of the chapter we asked how simulations are used in the teaching practices of nursing, law and management studies and in what ways they serve to bridge the gap between theory and practice. These three programmes have introduced simulations in various ways in an effort to meet these demands. Nursing studies use simulations with skills training as well as reflective opportunities midway through their hospital practice periods. Management studies use roleplays for training practical skills such as interviewing and hiring staff, and law students practice arguing law in a mock courtroom. They fulfil the demand stated in a range of studies (for an overview, see Damsa et al., 2015) that more interactive modes of teaching and learning situations are important to improve the quality of many study programmes.

The highly technical context of a simulations studio is challenging to the nursing students and causes them to focus intensely and participate with both body and mind. They are being observed and assessed by their teachers, and the result of their participation is always up for evaluation. The balance between tension and suspense on one side and being comfortable and free to make mistakes and reflect freely is a fine line to attend to. The management students are enthusiastic about doing their roleplay, where the scripts are simple enough to follow and challenging enough to immerse them in the activities. The law students enter the dramatic realm of the “courtroom” with high expectations and critical minds. They all conceived their training in simulations as realistic; a realism that seems to be necessary to make them engaged and experience the activities as meaningful and challenging. Doing these simulations also challenged the students in making decisions in pressured situations. Leaving the comfort zone of the auditorium and entering the dramatic and unpredictable arenas of simulations—encountering the risk of making quick, situation-specific judgments and decisions—seems like a worthwhile method for narrowing the gap between theoretical knowledge and practical experiences in professional education.

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4

Starting Early: Using ePortfolios to Prepare First Year Midwifery Students for Professional Practice

Terri Downer and Christine Slade

Introduction

The use of ePortfolios is a relatively new concept in midwifery education, although portfolios or folders were commonly used for many years to collect evidence for registration in hard copy format (McMullan, 2006). Increasing professional accreditation demands for evidence of competency and issues of storing and sharing paper-based copies motivated the shift towards ePortfolios (Ruiz et al., 2009; Slade, Murfin, & Readman, 2013). Universities, across Australia and internationally (UK, NZ, Europe and USA), adapted the original paper portfolio format and transformed it using online technology such as an ePortfolio. An ePortfolio is an online repository where the users, can collect, organise, reflect upon and share evidence of their activities, experiences and tasks. The use of

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the ePortfolio for assessment and learning in clinical settings allows students to access their personal portfolio using mobile devices (Dearnley, Haigh, & Fairhall, 2008). This provides them immediate access to relevant information which can be instantly applied to learning.

EPortfolio pedagogy encourages a shift of focus from teaching to learning supported by an online 'personal learning space' that allows students to evidence their personal and professional development using a variety of media types (Beetham, 2005; Butler, 2006; Sutherland, 2011). Pedagogical processes such as 'planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback' (Jisc, 2008, p. 6) underpin the development of this evidence collections. Multiple ePortfolio versions can be created out of these collections and shared at the user's discretion with different audiences (Jisc, 2008).

This chapter presents a study about the journey of first year double degree Bachelor of Nursing/Bachelor of Midwifery students at the University of the Sunshine Coast using an ePortfolio to monitor their growth in critical thinking, reflective practice and to provide evidence of meeting the professional standards required to register with the Australian Health Practitioner Regulation Agency (AHPRA). The ePortfolio task in this study is focused on the midwifery part of the double degree. After outlining the contextual importance of reflective practice and lifelong learning to these students, the main body of the chapter explores the students' pre-and post-use perspectives of their ePortfolio experience, particularly framed around their conceptual understanding, aspirations and user experience, support for students and staff, and the professional value of using an ePortfolio. After outlining the methodology and results, the chapter ends with a discussion about the contribution of this research to current ePortfolio practice and professional development.

Reflective Practice in ePortfolio

Reflective practice is an important process in midwifery, providing a link between theory and clinical practice and giving students the opportunity to develop a deeper understanding about their learning. The desire to have students develop in reflective practice is a key consider-

ation in introducing ePortfolios into undergraduate curriculum (Duncan-Pitt & Sutherland, 2006). An ePortfolio can be used to help support students pedagogically in learning how to (Wetzel & Strudler, 2006; Botterill, Allan, & Brooks, 2008; Lin, 2008). In a study conducted by Lin (2008) students found reflecting on their previous work and experiences in their ePortfolios constructive in gaining further understanding and insights about their learning. Student reflection on how they performed is a very important part of professional competency-based assessment; however reflective practice can be challenging to assess effectively (Connaughton & Edgar, 2012; Garret, MacPhee, & Jackson, 2013). Therefore, it is essential to develop a clear reflective process using a validated framework. While there are numerous reflective frameworks applicable to the midwifery discipline (Kolb & Fry, 1975; Kolb, 1984; Gibbs, 1988; Brookfield, 1998; Johns, 1995) on this occasion the educators chose Gibbs' (1988) reflective cycle as most suitable for first year students.

This framework offers a clear structure for students using six steps of reflection: a description about what happened; feelings the student may have had; an evaluation of the experience; then an analysis that links the experience to evidence-based practice; and finally, a conclusion and action plan about what the student would do next time they approach a similar situation. Through the process of reflecting midwifery students are encouraged to link their learning to the corresponding professional standards to identify their learning progress within the program. These reflections are then presented by the students in their ePortfolio to demonstrate their ongoing growth and development of learning. The PebblePad® ePortfolio platform at the University of the Sunshine Coast is available to students after graduation free of charge, so their personal growth processes and continuing professional development (CPD) can be ongoing, as required by the registration board. Student participants in the study by Wetzel and Strudler (2006) cited increased reflection as a benefit of using ePortfolios, along with improved organisational skills and preparation for job interviews. This clearly demonstrates that students are thinking ahead about their careers and the use of ePortfolio for lifelong learning.

Using an ePortfolio for Lifelong Learning

Commencing ePortfolio usage early in the curriculum allows students to initiate the development of lifelong learning patterns for maintaining their registration and responding to the requirements of future CPD. All health professionals, including midwives and nurses are required to undertake CPD once they have qualified (Gordon & Campbell, 2013). In an investigative study Lopez-Fernandez and Rodriguez-Illera (2009) found that introducing ePortfolios early in the curriculum enabled students to develop self-management skills and strengthen autonomous learning; both key components of lifelong learning. Lifelong learning is an important aspect of both midwifery practice in order to keep up-to-date with the rapidly changing health care environment (ICM, 2008) and for practitioners to remain registered as a midwife. Using innovative technological tools, such as an ePortfolio personalises this ongoing learning process.

Many occupations now use ePortfolios, such as social workers (Coleman, Rogers, & King, 2002) occupational therapy (Powell & Greenberg, 2009), teaching (Reis & Villaume, 2002) and the medical profession (Melville, Rees, Brookfield, & Anderson, 2004; Buckley et al., 2009). Its use gained momentum over recent years and a number of universities now include ePortfolios across their curriculum. A study by Scholes et al. (2004) considered the use of a portfolio from a multiple stakeholder point of view, and highlighted its value when considering reflective practice, illustrating critical analysis, providing evidence of competency and self-directed learning. EPortfolios are used to assess both the learning that takes place whilst studying for theory courses in an academic setting and the learning in the clinical placement (Farrand, McMullan, Jowett, & Humphreys, 2006). Furthermore, ePortfolios are useful when the student is applying for employment, career development opportunities and to provide evidence of lifelong learning (Wetzel & Strudler, 2006; Gray, 2008).

While not unique to midwifery lifelong learning is a mandatory part of maintaining registration. Midwives are required to complete 20 hours

of CPD every year to maintain registration. The *Continuing Professional Development Registration Standard* updated in 2016 by the Nursing and Midwifery Board of Australia (NMBA) specifies that continuing professional development is...

The means by which members of the profession maintain, improve and broaden their knowledge, expertise and competence, and develop the personal and professional qualities required throughout their professional lives. The CPD cycle involves reviewing practice, identifying learning needs, planning and participating in relevant learning activities, and reflecting on the value of those activities. (p. 1)

EPortfolios are useful to support midwives in demonstrating they meet the above requirements for registration. An ePortfolio enables the midwife to collect evidence, reflections, self-development, ideas and feedback from peers regarding their performance. This evidence is then available for annual reviews or audits by the NMBA.

The Student Perspective about ePortfolio

The purpose of this chapter is to present insights into the students' pre-use aspirations and post-use reflections of ePortfolio over one semester. Understanding the student voice allows refinement of the ePortfolio implementation at an institutional level. It also assists educators in designing and using technological advancements for curriculum development and pedagogical as well as professional learning experiences for students. As educators become more confident with using this new technology it will in turn improve teaching practice. Understanding student aspirations, preferences and purposes in using an ePortfolio can improve its acceptance (Tzeng, 2011). Given these important implications, the following sections outline pertinent themes from previous research studies exploring the perspectives of students using ePortfolios as part of their learning experience.

Conceptual Understanding of an ePortfolio

As an ePortfolio is a relatively new concept students may initially be unsure of its purpose, use and audience (Lin, 2008; Peacock & Murray, 2009). Therefore, students should be made aware of the benefits of ePortfolios when compared to an original paper version (Murray et al., 2006). The benefits of using ePortfolios include evidence of learning, reflection, incorporation of artefacts, ease of maintenance, access and portability (Butler, 2006). Gaining a sense of ePortfolio ownership assists students to understand the conceptual reasoning for using the tool and actively engage with its use (Tosh et al., 2005; Beetham, 2005). With the ability to customise or personalise their ePortfolio students take ownership of their work which becomes a valuable asset and resource when applying for a job (Jisc, 2008). Also, students should be aware that their ePortfolio will be available for them to use and continue to develop once they have graduated. The ePortfolio becomes an excellent tool for the continuation of their lifelong learning skills.

Aspirations and User Experience

User attitudes and intentions in using a new technology, such as an ePortfolio, are influenced by its perceived value to enhance performance and ease of use (Tzeng, 2011). In the study by Peacock and Murray (2009) aspirations of the participants were mixed; several participants were unsure of the role of an ePortfolio while others assumed it was an online diary. However, all participants could see the value of recording evidence of learning and assisting with personal development towards their careers. In a study by Wetzel and Strudler (2006) the majority of students cited preparation for interviews as a positive aspect of ePortfolios, with a future employer able to view the ePortfolio or using it as a tool to prepare for an interview. One insightful student in this study envisaged using the ePortfolio to provide evidence in meeting accreditation standards (Wetzel & Strudler, 2006).

User experience focuses on technological elements, accessibility, effort and time spent. Peacock and Murray (2009) found usability and accessibility were an issue for the students, while Wetzel and Strudler (2006) established that effort and technology issues included that uploading files was slow, some students had no internet or there was a lack of access to the internet. According to Lin (2008, p. 199) students were challenged in 'digitizing artefacts and troubleshooting hardware and software'; a process that was also time consuming. The majority of students, however, commented that learning these new skills gave them more confidence in using technology. The amount of time required to initially develop an ePortfolio is also a key concern in other studies (Tosh et al., 2005; Williams & Jordan, 2007; Peacock & Murray, 2009) with many students commenting on time being a detractor from completing their ePortfolio. Furthermore, medical health professionals asked to complete self-reflections in an ePortfolio found time a particular issue where they were required to balance patient care and professional development (Ruiz et al., 2009). Despite these issues, a more recent mixed methods study by Lopez-Fernandez and Rodriguez-Illera (2009) found students' experience of ePortfolios became more positive after their initial learning curve involved in using the technology.

Support for Students and Staff

It is difficult to develop an ePortfolio with limited expertise in both organising the content while tackling technical challenges in using the software (Lin, 2008). Some participants in the study by Peacock and Murray (2009) found the ePortfolio tool intuitive and easy to use while those that experienced difficulties explained it was due to lack of training in ePortfolio use. Appropriate training and support are crucial to dealing with technical difficulties that may arise during the use of ePortfolios (Fawns & McKenzie, 2010). Students and staff need to be clear about a course/unit's learning objectives and benefits of using ePortfolios from the beginning of the course/unit (Tosh et al., 2005). This, then, sends a positive message that all involved are working together to support student learning (Tosh et al., 2005). Support for staff enables the maintenance

of a favourable attitude towards the purpose and use of an ePortfolio (Williams & Jordan, 2007). For students, Peacock and Murray (2009) suggest several methods for improving engagement with ePortfolios, including more practical hands on sessions, time specifically set aside for exploring the software and further explanation about the benefits for the students. There is also benefit in reinforcing necessary skills across a number of courses/units simultaneously (Lin, 2008).

Professional Value of Using an ePortfolio

As health professionals, midwives are accountable for their actions and are required to remain up-to-date with their professional knowledge and practice. EPortfolios offer a means in which students can provide evidence of experience and development of their learning and achievements through processes such as skills to solve problems, reflect on their learning journey, and evidence their improvement as well as learning technical skills (Lin, 2008). Students can also demonstrate to the registration board that specific requirements are met and ePortfolios are useful for future employment. In summary, previous scholarly research of student perceptions before, during and after using ePortfolios provides insights into the pedagogical value of using this tool, the importance of student 'buy-in' at the beginning, and highlights challenges to user experience as well as the necessity of support for both staff and students.

The Context

This double degree program prepares students, over four years, for registration with AHPRA as both a nurse and a midwife. Eligibility to register requires students to complete minimum standard of supervised nursing and midwifery practice experience (Australian Nursing and Midwifery Accreditation Council (ANMAC), 2014). Nursing registration requires students to evidence 800 hours of clinical placement. Midwifery registration requires students to collect evidence of attending 100 antenatal and 100 postnatal visits; following ten women throughout their pregnancy

journey in a continuity of care model; attending 30 normal births; and many other specific requirements (ANMAC, 2014). Previously, students collected these experiences and evidence in a paper-based portfolio. Feedback from students indicated that while this was a useful way to collect evidence it had no ongoing benefit in terms of CPD and future career prospects.

The introduction of ePortfolios across the program curriculum began in Semester 2, 2014 with the first-year cohort of 48 students, as part of a university-wide ePortfolio rollout using the PebblePad® software platform. The first assessment task for the initial cohort consisted of students finding five midwifery-related field experiences e.g. antenatal yoga, antenatal education classes, mothers groups and reflecting on each of these experiences using Gibbs' reflective cycle (Gibbs, 1988). A template was created by the program leader for the students to use in their ePortfolio, with specific descriptors about what was required for each of the six steps of the reflective cycle.

The introduction of ePortfolios will continue incrementally over the next few years until all students will use ePortfolios across the entire program, as mapped by the program leader with assistance from the Academic Developer (ePortfolios) at the University's Centre for the Support and Advancement of Learning and Teaching (C-SALT). The Learning Designer (ePortfolios) from C-SALT provided training for the program leader and tutors in the use of PebblePad® and assisted in the development of the template. In turn, the program leader of the double degree provided workshops for the students in Weeks 5 and 10 in the computer labs. These sessions supported students with the use of the software, reinforced the method of submission in PebblePad®, provided support with the writing and completion of reflections and encouraged students to find their final field experiences if they had not already done so. Again, both the program leader and course coordinator were available to provide support and answer questions at these sessions. Resources for the assessment task and a login area to PebblePad® were all available for the students on the learning management system (Blackboard) in the appropriate assessment task. This included self-help guides on how to complete the assignment, such as how to use Gibbs' (1988) reflective cycle.

Survey Method and Analysis

This study is part of a larger research project regarding ePortfolio implementation across multiple disciplines within the University. It used a quantitative framework facilitated by a survey method informed by similar approaches in scholarly ePortfolio literature (Hallam et al., 2008; Peacock & Murray, 2009). This overarching approach was appropriate due to a number of factors including: the size of the anticipated overall sample (500–700 students); the ability to gauge initial responses by participants in the early stages of implementation; and future opportunity to develop other more in-depth stages in the research throughout the next few years. Data were also collected from the educators so that their voices and opinions could be heard to gain further insight into the context of student ePortfolio use. Human ethics clearance was sort by the researchers and approved by the University.

Data collection methods included pre-use and post-use surveys of the students as well as post-use surveys from the program leader and course coordinator. The pre-use survey consisted of 18 questions while the post-use survey consisted of 20 questions. Questions aimed to explore student's perspectives regarding their perceived conceptual understanding and aspirations, user enablers and barriers, needs for learning support and anticipated future uses. In both surveys these question areas were grouped under four main headings: Background Information; Attitudes towards the Use of an ePortfolio; ePortfolio Use in Your Course, and; The Potential Value of Using an ePortfolio. The post-use survey also contained a question on ePortfolio use and the university graduate attributes. Quantitative and qualitative responses were combined through the surveys.

Surveys were collected using the online software tool, SurveyMonkey®. Using this method of data collection facilitated ease and speed of data entry for the students and low cost, initial analysis of results for the researchers. The software also allowed for more than one answer for each question if necessary and manual entry of results from hardcopy survey responses. The quantitative data obtained from the surveys was analysis using descriptive statistics from SurveyMonkey® while the

qualitative data was imported into *NVivo* 10 software and analysed thematically.

The pre-use survey was conducted in a computer lab session by an independent representative with the students just after they had received their password and access to the ePortfolio software system. The majority of students who attended the class participated in the survey. The post-use survey was offered online towards the end of semester after students had engaged with the ePortfolio and had submitted their assignment through the ePortfolio software. At the time of release of the second survey the students were on a clinical placement and thus it was more challenging to obtain a large sample.

Results of the Surveys

Pre-use survey responses were received from 46 students and post-use survey responses from 15 students. The researchers anticipated that the number of post-use responses would be considerable lower as the students were off campus attending clinical placement. This made an online response to the post-use survey the only option when compared to the pre-use survey when both face-to-face and online delivery were available. Given this limitation the researchers acknowledge that these responses only suggest trends and further analysis by comparing individual student responses to both surveys would give further clarity.

The first section of the survey collected demographic information about the respondents. Twenty-seven (58%) of the students who responded to the pre-use survey were aged between 18–22, followed by seven who were 28–35 (15.22%), four in both under 18 years and aged between 36–45 (5.70% each). Eight (53.33%) of the fifteen students who responded to the post-use survey were 18–22 years, three were 36–45 (20%), followed by two (13.33%) in both 23–27 and 28–35 year old categories. All respondents were female undergraduates.

The following sections outline the main findings from both surveys and is organised under four headings that look at the users' conceptual understanding of an ePortfolio; their aspirations and user experience; support; and the professional value of using an ePortfolio.

Conceptual Understanding of an ePortfolio

In surveying the students, we aimed to explore their conceptual understanding of an ePortfolio given the different stages of their ePortfolio use. Students in both surveys chose one or more statements that best describe their understanding of an ePortfolio (see Table 4.1). The majority of students in the pre-use survey understood an ePortfolio to be an electronic tool for self-assessment, a place where they can record their experiences during the course (60.87%), an electronic version of a paper portfolio

Table 4.1 Summary of responses to conceptual understanding of an ePortfolio

Question	Pre-use survey (<i>n</i> = 46)		Post-use survey (<i>n</i> = 15)	
	%	No	%	No
<i>Which statements best describe your understanding of an ePortfolio?</i>				
It is an electronic tool for self-assessment, a place I can record my experiences during my course	60.87	28	53.33	8
It is an electronic version of a paper portfolio	43.48	20	26.67	4
It is an electronic filing cabinet filled with examples of my course work	23.91	11	20.00	3
It is a secure electronic repository for me to collect and store evidence of my skills and knowledge attainment	41.30	19	26.67	4
It is a place for me to reflect upon my learning journey—where I have come from and where I'm going—it's about the process of learning	30.43	14	33.33	5
It is about evidence of skills, but there's also an opportunity to show the process and to reflect on what this means to me	23.91	11	60.00	9
Other (please specify)	0.00	0	0.00	0
<i>Purpose of ePortfolio in the course</i>				
Reflective practice	65.22	30	73.33	11
Student learning	47.83	22	20.00	3
Assessment	43.48	20	93.33	14
Graduate career showcase	30.43	14	6.67	1
Accreditation	23.91	11	6.67	1
Continuing professional development	58.70	27	6.67	1
Employment promotion	28.26	13	0.00	0
Performance review evidence	28.26	13	0.00	0
Other (please specify)	0.00	0	0.00	0

(43.48%), and/or a secure electronic repository for collection and storage of evidence (41.30%). After using an ePortfolio for an assessment task, the majority of students (60%) viewed an ePortfolio as a place to evidence skills and an opportunity to show their reflections on processes undertaken, followed by respondents (53.33%) reiterating it is an electronic tool for self-assessment.

Students were also asked to consider the purpose/s of using an ePortfolio in their course/unit (see Table 4.1). The majority of students (86.96%) did not have any prior experience with ePortfolio use but could, however, already identify its usefulness in reflective practice (65.22%) and continuing professional development after graduating. Three students commented that an ePortfolio is useful in the following ways:

As a place to collect other experiences for future referral. As a way of reflecting on the entire learning experience of the degree. I will use it to store certificates or other qualifications relevant to my career or degree.

and

By continually uploading all relevant documents and continuing to build my ePortfolio after graduating it can tell the story of my development as a Nurse/Midwife. Employers can look back at results, etc. If they have any queries about my accreditations or my competency.

and

Reflective practice, assessment, employment promotion and continuing professional development.

In the post-use survey students commented on their future use of ePortfolios and again were able to take a more futuristic view of its relevance to employment, in addition to using it for their reflective practice assessment task, as explained by one student.

In the future I would probably use Pebble Pad as more of an online portfolio for employment rather than a reflective process for assessments.

Another student commented that an ePortfolio would be useful in the future as a place to store documents and reflect on her practice, which was supported by a staff member as well:

The ePortfolio has been used as an assessment tool, however in the future it can be used to store portfolio files and reflect on my experiences.

and

In the profession of nursing and midwifery we are required to undertake many hours of professional development and keep evidence recorded. Pebble allows students to do this in an easy professional manner.

Aspirations and User Experience

Students were then asked how they felt about using an ePortfolio in the course and what they would like to achieve in their ePortfolio, both now and in the future. They were first asked to self-rate their computer use competency. The vast majority of students in both the pre and post-use surveys (78.26% & 73.33 respectively) saw themselves as early adopters and/or active users of computers, followed by approximately 20 per cent in each survey as later adopter but willing users (see Table 4.2). While no student saw themselves as an innovator or designer in computer use before ePortfolio use, one student did so in the post-use survey. Most students were positive or neutral about using an ePortfolio in their course which remained after use. Asking students about how often they would use or did use their ePortfolio produced interesting results. In the pre-use survey respondents envisaged usage to be once a week (36.97%) or on either side, twice a week or once a fortnight. After using the ePortfolio 21.43 per cent of students were active every day, then 28.57 per cent once a week, followed by once a fortnight (35.71%) and surprisingly given the nature of the assessment task, once a month (28.57%).

As the assessment task was about reflection, it was anticipated that the response options about demonstrating learning to others and submitting an assessment piece through an ePortfolio would be priorities for student

Table 4.2 Student self-rating about their anticipated and actual use of an ePortfolio

Question	Pre-use survey (n = 46)		Post-use survey (n = 15)	
	%	No	%	No
<i>Feeling about using an ePortfolio in the course</i>				
Enthusiastic	6.52	3	7.14	1
Positive	41.30	19	28.57	4
Neutral	43.48	20	35.71	5
Uncertain	10.87	5	35.71	5
Confused	2.17	1	0.00	0
Anxious	0.00	0	0.00	0
<i>Like to achieve/have achieved in ePortfolio</i>				
Create a CV or resumé	52.17	24	0.00	0
Record critical reflections on my learning experiences	67.39	31	73.33	11
Demonstrate my learning to others	39.13	18	20.00	3
Submit an assessment piece using the ePortfolio	50.00	23	93.33	14
Work collaboratively with peers	21.74	10	6.67	1
Record evidence of competency	71.74	33	46.67	7
Other (please specify)	0.00	0	0.00	0

achievement. However, 52.17 per cent of students wanted to create a CV or resumé but none were reported in the post-use survey suggesting the direct link between required assessment and scope of usage. Recording evidence of competency was also a priority.

Students can conceptually understand the purpose of an ePortfolio and rate themselves as early adopters of computers but still find the use of technology challenging. Prior to creating the ePortfolio students were able to identify potential problems with using the software but also a lack of understanding regarding the storage of their work. The main concerns were access to the internet, technical issues and time constraints. Comments included the following:

Not always able to have access to internet—unable to access.

and

Not fully understanding how to use the ePortfolio correctly, Internet problems—loss of connection, loss of evidence, loss of work.

Time management was also a concern:

Getting to know how to use the ePortfolio. Also finding time.

After use, 53.55 per cent of students who responded in the post-use survey, found learning how to use the PebblePad® software easy, 40 per cent found it reasonable, and 5.57 per cent or one respondent found it hard. The majority of students commented on its ease of use, for example:

It was easy once you got the hang of it.

and

The site is easy to navigate.

Some students appeared to want more information at an early stage regarding the software's full potential and use as highlighted by one respondent:

It would have been easier if we had someone go through all the functions, not just how to access our workbook.

Problems encountered include freezing of the software, which may have been a browser issue but still could be a barrier. Further, there is a link between how hard students found the program to use and where they went to seek help.

Support for Staff and Students

Support was provided for staff by the ePortfolio team in the centralised learning and teaching unit, C-SALT as mentioned earlier, and in turn for students, by their program leader and course coordinator. Staff received training in using the software and assistance in the development of resources to train the students as well as workbooks used in the assessment process. Staff commented that all their needs were met throughout

the semester and they were able to access the help videos embedded in the software:

All my needs have been met the support staff have been very helpful. Pebble also has a very useful help resource which utilises short video clips.

Staff could also see the potential for future development of learning activities and assessment tasks to assist students evidence their practice:

I think we are only just scratching the surface of how useful this will be to provide evidence of reflective practice.

and

PebblePad seems like a fabulous platform for students to be able to produce, collate and store their work throughout their uni learning.

Prior to using an ePortfolio the students were concerned about getting appropriate support which is understandable given they were new to the software and required to use it for an assessment task. Students identified the areas in which they anticipated needing assistance and stated they would seek help from their course coordinator, tutor or IT support services to enable them to be successful. Students suggested the following support would be helpful:

Adequate explanation of how to use it. An option to get help when needed. Teachers who are able to correct any errors we make and help us through using it.

and

Steps and tutorial on how to use the program.

and

Technician support if something doesn't work on the ePortfolio.

Following the use of the ePortfolio for their assessment task, students reported that it was particularly helpful seeking assistance from peers and from the course coordinator and/or tutor. The design of the assessment task using a workbook also contributed to the ease in which students completed the task as the comments below indicate:

Instructions on how to use and navigate ePortfolio from my tutors or peers and IT support

and

Just peer support. Learning from each other. How to navigate, etc.

and

My coordinator showed me how to use the portfolio system and it was very easy to use.

Professional Value of Using an ePortfolio

The professional value of using an ePortfolio was considered from the students' point of view. Many students expected that their ePortfolio would be a valuable resource when it came to writing their job applications and preparing for interviews and upon graduating providing evidence for their CPD. While many of the students could visualise the use of ePortfolio for professional practice through storage of documents several other students understood its value as a place to continue their learning once qualified as a registered nurse/midwife. Students made the following comments:

By continually uploading all relevant documents and continuing to build my ePortfolio after graduation it can tell the story of my development as a nurse/midwife.

and

Being able to show I'm competent in certain areas and allow me to reflect upon my behaviour which will better my practice.

and

I think my continual development of my ePortfolio will be a critical tool in providing evidence in my continuing professional development.

Contribution to Current ePortfolio Practice and Professional Development

This study originated from the implementation of ePortfolio across the curriculum for students studying a double degree in nursing and midwifery, although the focus of this chapter is early ePortfolio use around a midwifery assessment task. Applying technology and information literacy are two of the graduate attributes valued by the University as being important outcomes for students. Staff and students in this course were very positive about using an ePortfolio which is supported by previous studies of student perceptions in scholarly literature (Butler, 2006; Williams & Jordan, 2007).

Development of Reflective Practice for Lifelong Learning and Professional Requirements

Learning how to reflect on practice is a fundamental skill in midwifery and early use of an ePortfolio initiates lifelong learning patterns of reflection for students (Lopez-Fernandez & Rodriguez-Illera, 2009). Assessing professional competencies relies on students' reflections of their performance but this can be challenging to assess (Connaughton & Edgar, 2012; Garret, MacPhee, & Jackson, 2013). This initial introduction to an ePortfolio using a reflective assessment task is a foundation on which the dual degree program curriculum will build graduate skills, knowledge

and attributes. The majority of students in this study understood an ePortfolio as a self-assessment and reflective tool, similar to previous studies which found using an ePortfolio effective in supporting reflective practice (Lin, 2008; Gerbic, Lewis, & Northover, 2009). In the next semester of the course students will begin to recruit women for their continuity of care experience. Reflections from this ongoing activity should see a pattern of growth and development of the students' communication skills, knowledge and self-assessment through their reflective practice.

Further, as Wetzel and Strudler (2006) previously found, students in this study saw benefits in using an ePortfolio as an online place to store evidence for their future careers and ongoing practice. The respondents showed emerging understanding of their role as developing professionals with the view that their educational journey does not end at graduation but continues into their careers. With the increasing use of technology and newer hospitals heading towards a paperless system one student in this study could see the potential that ePortfolios would become standard practice in order to keep up.

Conceptual Understanding of an ePortfolio

It is important for students to understand the purpose, use and audience of using an ePortfolio (Lin, 2008; Peacock & Murray, 2009). Cultivating a sense of ownership helps students understand why they are using such a tool and be able to engage more fully with it (Tosh et al., 2005). These first year students showed a rather mature understanding of the concept of an ePortfolio and its benefits in ongoing skill development for early users. A sense of ownership will potentially be developed as future courses across the program embed the use of ePortfolios for these students which is expected to become normal practice for students (and educators). Educators will need to continue to promote the values of using an ePortfolio not only for students but more importantly for their own practice as a health care professional (Williams & Jordan, 2007). This will have a flow on effect throughout the degree

with more staff involved and able to help students with any issues that may arise.

Aspiration and User Experience

The perceived value for the use in adopting of a new technology such as an ePortfolio impacts user attitudes and intentions towards the tool (Tzeng, 2011). This study concurred with much of the literature (Lin, 2008; Williams & Jordan, 2007; Tosh et al., 2005; Ruiz et al., 2009; Peacock & Murray, 2009) that time to develop the ePortfolio was an issue for students. While the majority of respondents found the software easy or reasonable to learn, some students experienced technological challenges. Software issues such as freezing were easily managed by changing the students' internet browser choice. Several students commented how easy the software was to use once they were shown, enabled them to mentor and help their peers. This process aligns with the findings by Lopez-Fernandez and Rodriguez-Illera (2009) that students' experience of ePortfolio becomes more positive after they successfully negotiate the initial learning curve.

Support for Staff and Students

As Pincombe, McKellar, Weise, Grinter, and Bereford (2010) assert adequate training of both students and tutors is required to consolidate new skills when using technology. One of the successes of this initial introduction to ePortfolio was the buy-in from staff involved in the course. Support from the C-SALT team with tutor training and development of resources was also central for its success. As students and staff became more familiar with the software peer assistance became more evident and tutors more confident in its use and application to practice. Aligning learning outcomes with the assessment task made the introduction of an ePortfolio easier to understand for all those involved which aligns the findings of Tosh et al. (2005). Students felt well supported by their course coordinator and tutor.

Conclusions

The use of ePortfolio with first year students prove to be very successful. The students engaged in learning and reflected on their practice which was a requirement of the assessment task. By introducing ePortfolios early in their degree students were able to develop initial skills in reflective practice and documentation of their requirements for registration. These skills will be enhanced and consolidated throughout the remainder of the dual degree where students will get further practice in the use of their ePortfolio. Conceptually, students recognised both the immediate and future purposes for using an ePortfolio in terms of learning, employability and CPD. Support for the students from staff was an important aspect of this study and helped provide them with confidence. Technological challenges were resolved and with further support and training students will become more confident in their use and development of a personalised portfolio of evidence as they progress through the program. From a student perspective, it gives them the foundations for using a tool that will support their practice, not only throughout the double degree, but also provides a structure for planning their career progression, professional competency requirements and lifelong learning as a midwife and/or a nurse. It is anticipated that future ePortfolio research will continue to explore these themes as students continue to develop and progress through the program towards professional practice.

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5

Starting With the End in Mind: Future Focussed Curriculum in Health Promotion

Jane Taylor, Theresa Ashford, Karen Shelley,
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Introduction

Health promotion graduates seek employment in roles that address complex health issues of groups, communities and whole populations at local and global levels. This work requires graduates to develop, implement and evaluate sustainable health promotion policies and programs that address complex and changing social, economic, political, and environmental determinants of health (Baum, 2008; Taylor, O'Hara, & Barnes, 2014). Tertiary health promotion curricula therefore need to respond to the current and future needs of students as health promotion professionals to ensure their work readiness. This involves concomitantly developing integrated discipline competence and the generic professional skills and qualities of students over the course of their tertiary program.

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The challenge addressed in this quality curriculum assessment practice example was in bringing together graduate level health promotion professional competencies (Australian Health Promotion Association, 2009; Barry, 2010), University of the Sunshine Coast (USC) Graduate Attributes (GAs) (University of the Sunshine Coast, 2013a) and Principles informing assessment (University of the Sunshine Coast, 2013b) to assure student learning through productive and constructively aligned programmatic assessment. These curriculum frameworks complement and advance the focus on significant and transferable qualities and skills deemed necessary for work ready graduates. The collaboratively designed programmatic assessment approach and associated quality assessment resource presented in this practice example demonstrates how health promotion competencies work synergistically with university level graduate attributes to prepare work ready professionals.

Specifically, the practice example describes and reflects on the health promotion curriculum renewal journey to develop a programmatic level assessment practice aimed at: (1) improving the judgements and consistency academics make about the quality of students' assessable work; and (2) providing greater clarity for students on assessment expectations and standards, and how these relate to work ready competencies. The team undertaking this work included health promotion academic teaching staff and academic curricula developers from the central learning and teaching unit. A constructively aligned approach was used to design a programmatic assessment resource that embedded health promotion professional competency requirements (Australian Health Promotion Association, 2009; Barry, 2010), institutional graduate attributes (University of the Sunshine Coast, 2013a), and best-practice assessment principles (Readman & Allen, 2013). The output of this work was the Health Promotion Program Rubric Creator (*Rubric Creator*). Feedback from academics that have used the *Rubric Creator* to develop assessment task rubrics indicates the resource contributed to the overall quality of their assessment practice and enhanced clarity for students about what was assessed in their courses and how.

This quality curriculum assessment practice case example is presented in three sections. Section 1 describes the Health Promotion program curriculum renewal journey. Section 2 describes the development of the Health Promotion program *Rubric Creator* and presents academic users feedback. Section 3 presents authors reflections on the quality assessment practice in reference to best practice assessment.

Section 1: Health Promotion Program Curricula Renewal Journey

Quality Assessment Practice Impetus and Context

This practice example is situated within the 2012–2013 USC Health Promotion curriculum renewal. This renewal journey focused on aligning undergraduate and postgraduate health promotion curricula with new institutional GA's introduced in 2010 (University of the Sunshine Coast, 2013a) and revisiting their alignment with health promotion competency frameworks (Australian Health Promotion Association, 2009; Barry, 2010). At the time the graduate attribute agenda focused on supporting programmatic curriculum design, translating discipline and field competencies and skills to broader and transferable skills and qualities that could be mapped and tracked, and assuring quality in curriculum design and delivery (Barrie, Hughes, & Smith, 2009; Ducasse, 2009; Hunt & Chalmers, 2012). Embedded into this practice was the exigency of 'designing for professional competency' that catered for the diversity of health promotion career paths (Seltzer, 2010). The Health Promotion program renewal process leveraged the USC Graduate Attribute Model of programmatic curriculum (Readman & Ashford, 2012) to tie learning and teaching experiences with connected and authentic assessment to produce an integrated learning experience for students (Barrie et al., 2009).

The curriculum renewal process involved first identifying the qualities and skills health promotion graduates require, then mapping the knowledge and attributes backwards through the curriculum (Wiggins & McTighe, 1998) to ensure their sound and cohesive development. This produced a programmatic map that indicated what was being taught and assessed. The project team then agreed that a constructively aligned programmatic level assessment rubric resource could enhance the quality of assessment practice across the program. It was proposed the rubric resource focus on professional health promotion knowledge, attributes and skills, and set standards for the introductory, developing and advanced learning levels. This endeavour is not a new idea, and the VALUE rubric

development project (Association of American Colleges and Universities) which is also supported by Professor Beverly Oliver's work around assuring graduate capabilities (Oliver, 2016) was a source of inspiration. In particular our team identified an opportunity to:

- Integrate professional competencies and USC graduate attributes into a tool that explicitly demonstrated how students would show evidence of progression over the years of the program;
- Bring academic staff working in the health promotion program on a professional journey to deepen shared understanding of how assessment can evidence professional competency; and
- Create the time and space for the Health Promotion academic team to have robust and scholarly discussions about constructively aligned curriculum including assessment.

USC Graduate Attribute Curriculum Model

The USC Graduate Attributes Curriculum model (Readman & Ashford, 2012) was developed to ensure relevant, quality and future focused curriculum at USC. The model is straightforward and tracks the implementation and evaluation of graduate attributes at an institutional level over four stages (Fig. 5.1). The four stages of the model relate to different but interrelated curriculum design activities and maps the establishment and embedding of graduate attributes through a staged process. This process moves program teams from the initial conceptualisation of the graduate attributes at a program level through to embedding them at course assessment level.

In stage one, *natural mapping*, a program level map or '*natural map*' is constructed by collecting the first movement of courses into the GA framework. The GAs act as curriculum translators to encapsulate complex competency-based learning outcomes into key words that can be tracked into course outlines. Research indicates that a significant issue with the implementation and then quality assurance with graduate attributes is the lack of conceptual clarity around these social learning constructs (Barrie et al., 2009). For USC, graduate attributes are university

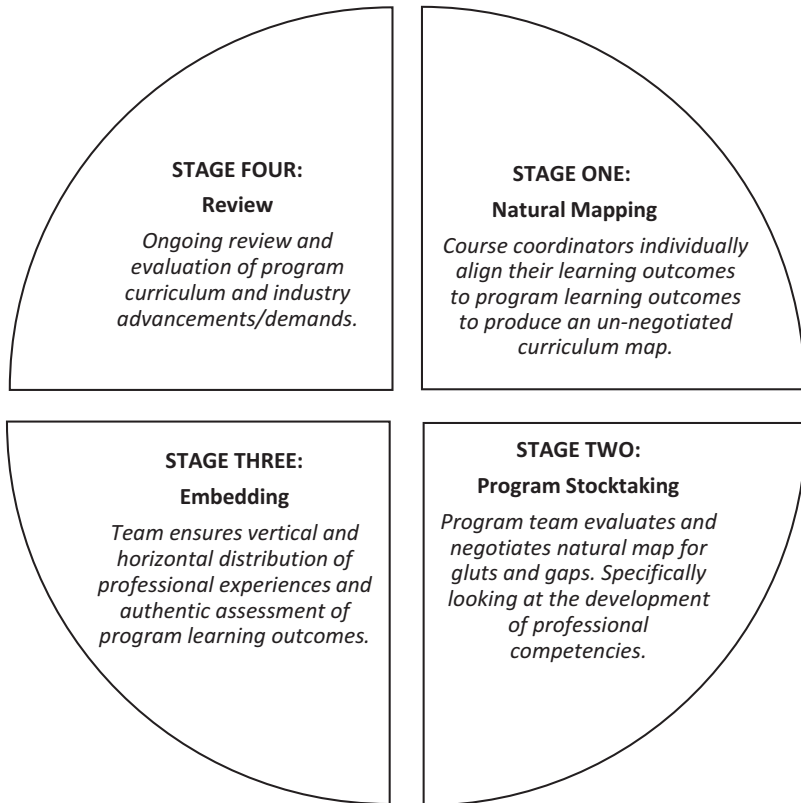


Fig. 5.1 Four stage USC curriculum graduate attributes model (Readman & Ashford, 2012)

level learning outcome descriptors (*Creative and Critical Thinking, Empowered, Engaged, Knowledgeable, Ethical, Sustainability Focused*) informed by discipline contexts and external accreditation standards (University of the Sunshine Coast, 2013a). Stage one involves developing discipline level conceptual clarity of the graduate attributes and then translating program level learning outcomes into courses by course coordinators. When all courses have translated and aligned course learning outcomes with the graduate attributes framework, mapping data is collected into a single picture—a ‘natural’ program map. This translation

process of re-naming what currently occurs in courses into the graduate attributes framework is complex and complicated work.

Stage two, *program stocktaking* involves the program team interrogating the ‘natural’ map with different lenses to: test conceptual clarity (what does this graduate attribute mean to others); look at the programmatic journey; identify ‘gaps’ and ‘gluts’; and question whether the right graduate attributes are cumulatively privileged and covered appropriately. This stage is called program *stocktaking* and was done by the Health Promotion team with the assistance of the academic curricula developer. The focus of this work is to ensure a learning centred approach, negotiate improvements with the ‘natural map’ and increase clarity of the student learning journey across the program.

The specific outcomes of this programmatic curriculum exercise shared in this chapter focuses on the products developed at stage three—*Embedding*. This stage involves academic teams constructively improving the curriculum by aligning learning activities, competency language and expectations with assessment. In this practise example, the Health Promotion team produced a programmatic rubric creator resource as a culmination of their curriculum renewal journey. Stage four, *review* is the last stage of this model and involves ongoing review, evaluation and alignment of activities to ensure program curriculum maintains industry relevance and academic integrity. It is only with the knowledge and collegial understanding developed through the first three stages that such a review will result in an academics confidence to make such evaluative judgements and curriculum changes.

Reporting on Stage Three: Embedding a Programmatic Assessment Approach

An outcome of working with this curriculum model was the identification of the need for a more explicit programmatic assessment approach in *stage three: embedding*. At the start of the curriculum renewal journey a criterion-referenced and standards-based assessment approach (Readman & Allen, 2013) had not been fully adopted across the program. There were also differences in academic’s approaches

to assessment practice. These differences were partly attributable to an institutional reorientation of assessment practice and recent changes in the Health Promotion academic team. Use of the curriculum model stages (Fig. 5.1) resulted in the academic team working together to develop a programmatic assessment approach. This process disrupted the potential for academics to work in isolation to develop, implement and evaluate assessment without reference to other courses in the program. Ultimately the Health Promotion programmatic *Rubric Creator* was developed.

This programmatic quality assessment practice aligned with the five principles or non-negotiables of assessment proposed by Readman and Allen (2013). The non-negotiables framework reinforces well researched principles drawn from researchers in the field of higher education assessment (Biggs & Tang, 2007; Black & William, 2012; Boud & Falchikov, 2006; Earl, 2013; Nicol & Macfarlane-Dick, 2006) and rearticulates them as a tool for guiding assessment design. These principles include: *feedback* on learning; *transparency* and fitness for purpose; *alignment* of assessment with learning outcomes; *student engagement* where assessment is part of the learning process; and *authenticity* where assessment types reflect professional tasks (Readman & Allen, 2013) (Fig. 5.2).

The curriculum team used these assessment non-negotiables to ensure the work stayed on track and focussed on the important elements of assessment design. Essentially, they enabled a reflective lens that highlighted the multifaceted and complex nature of assessment. The team

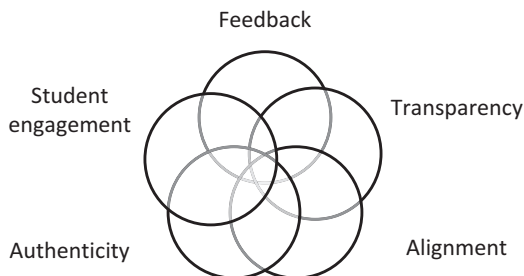


Fig. 5.2 Readman and Allen's current non-negotiables (Readman & Allen, 2013, p. 53)

moved from a functional assessment approach focussed on evaluation of knowledge, skills and applications at different standards, to understanding learner needs of clarity, alignment, feedback, authenticity and engagement. The *Rubric Creator* was a reference point for academics to align (Biggs & Tang, 2007; Readman & Allen, 2013) program learning outcomes with valid criterion referenced assessment standards across the -student learning journey from introductory knowledge, skills and applications through to advanced level standards in the Australian Qualifications Framework for the Bachelor Degree (Level 7) and Master Degree (Level 9) (Australian Qualifications Council, 2013).

Focusing on Assessment Standards

There is increasing focus in Australia and internationally, on improving the effectiveness of assessment practice (Rust, Price, & O'Donovan, 2003). Criterion-based assessment is now used to enhance transparency around assessment for students by making the grading process more explicit (Sadler, 2005). At USC we have seen growing use of criteria sheets or rubrics in assessment. Rubrics contain criteria—"attributes or rules that are useful as levers for making judgements" (Sadler, 2005, p. 179) and standards—quality descriptors that describe the extent to which criteria have been demonstrated at each level. Developing clarity or transparency across an assessment suite undoubtedly enhances student learning as shown by Rust et al. (2003). It also enables academics to constructively plan across courses. Knowledge transfer is a critical element in programmatic curricula design and developing a common assessment language around criteria, standards and assessment requirements has been shown to benefit both students and academics (Rust et al., 2003).

Kuzich, Groves, O'Hara, and Pelliccione (2010) confirm that assessment and evaluation are "essential components in the quality assurance cycle in higher education" (p. 28). They also advocate for more focus on standards—especially the Australian Qualifications Framework (AQF) (Australian Qualifications Council, 2013). This is further supported by the Department of Education, Science and Training (2002) *Striving for quality* report which states that, "if articulated academic standards are to

be maintained, academics need to share a common understanding of the standards and fairly and consistently assess student achievement in terms of the standards” (p. 28). Wood, Thomas, and Rigby (2011) concur that academic standards are important “for shaping effective teaching and learning so that higher education institutions can be accountable to employers” (p. 12).

USC has also responded to the Higher Education Standards Framework (Threshold Standards) (2011) through academic and curriculum policies and procedures to ensure curriculum standards, design, resourcing, admissions, assessment and monitoring. Academic quality standards are characterised in the USC graduate attributes, which consist of graduate qualities and generic skills. The synergistic combination of discipline standards, AQF (Australian Qualifications Council, 2013) and USC GAs across a single evaluative program instrument sounds like a difficult task for a program team. The response to this complex curriculum challenge advanced by the project team was to ensure constructive alignment by using the USC GAs to work as an intermediary for the AQF standard descriptors and health promotion discipline professional competencies.

Arguably, the AQF academic standards anchored the programs graduate standards, but these standards were characterised through the six discipline-defined graduate qualities. It was anticipated that by creating a program level criterion-referenced and standards-based assessment tool a more consistent use of assessment rubrics, and assessment practice would occur. It was hoped that this practice reorientation would enable robust conversations about standards, assist staff to formulate consistent standards of achievement, provide an objective and transparent way to grade student work, and make achievement expectations clear to students (Howell, 2013).

O’Donovan, Price, and Rust (2004) state that improving the assessment practice of academics could start with the clear articulation of standards. However, this is more difficult than it may first seem. Many questions emerged in this process such as: Which standards take precedence? Can we attend to the multiple stakeholders? How can we articulate the explicit and tacit elements in a standard? How do we design coherence across this heterogeneous and multi actor landscape? In the end, this was a productive process for academics that included discussions

and sharing of experiences about previous assessment practice. This professional conversation arguably enhanced academic engagement in assessment and staff confidence and competence around rubrics. Indeed Sadler (2005) confirms that there are four fundamental challenges facing university educators who want to use rubrics: (1) “understanding the concept of a ‘standard’; (2) working out how to set a standard; (3) devising ways to communicate standards with students and colleagues; and (4) becoming proficient in the use of standards” (p. 190). The first challenge lies in articulating useful and meaningful standard level descriptors—as always, ‘the devil is in the detail’. In order to move assessment practice forward, the Health Promotion team decided to tackle the challenges they had identified one at a time.

Section 2: Health Promotion Program *Rubric Creator* Development and User Feedback

The purpose of the *Rubric Creator* was to contribute to constructive alignment and shared understanding of standards at the program level, and support academics to design valid criterion referenced assessment rubrics (Biggs & Tang, 2007; Readman & Allen, 2013) at the course task level. This section of the practice example describes the development of this resource, which occurred in three stages, and presents feedback on academics perceptions about its usability and impact on their assessment practice.

Rubric Creator Development

Stage 1: Desktop Review

The development of the *Rubric Creator* began with a desktop review of criteria sheets and rubrics already in use in courses in undergraduate and postgraduate health promotion programs. The review identified that all rubrics in use adopted the five-point grading scale typically used in Australian universities—High Distinction, Distinction, Credit, Pass and

Fail. Two major issues were also identified with regard to how standards were communicated using the rubrics. Firstly, inconsistency in the presentation of standards which is confusing for students struggling to interpret what the standard descriptors mean and how to use and apply them. Secondly, variability in rigour expressed through the standards. Wood et al. (2011) confirm that “different academics and institutions will have varying ideas as to how to apply [criterion-based assessment] in both theory and practice” (p. 14) so in some respects, this was not a surprising outcome of the review.

O’Donovan et al. (2004) acknowledge a problem in articulating useful and meaningful level descriptors on rubrics which was evident across the Health Promotion program. For example, there was disparity in the number of criteria used for tasks, variation in the brevity and/or verbosity of rubrics, and differences in the rubric layout—some written with the fail descriptor appearing in the first column after the criteria, others with the high distinction standard appearing first. There was a difference in the language used to describe the measure of quality at each level of achievement which resulted in a lack of clear gradation of standards from High Distinction to Pass. Differences in language used increases inconsistency and the potential for slippage in consistent understanding by students. Numerical values were also included on some rubrics which is a practice inconsistent with a qualitative description of standards and levels of achievement. Standards were often found to be procedural and outlined what students were supposed to complete and how many marks would be allocated for completing that part. Gore, Ladwig, Elsworth, and Ellis (2009) have identified this to be poor practice that does not support students or encourage their success in the task as it promotes competent/not competent or pass/fail mentality based on the quantity and quality of student work. This practice does not encourage higher cognitive thinking about course content or assist students in understanding how they are able to improve their performance.

Second, there was inconsistent use of standards expressed in the rubrics, resulting in unacceptable variations to the level of rigour applied to the assessment process. The importance of universities maintaining high and consistent academic standards is a perennial concern in higher education (Gore et al., 2009; O’Donovan et al., 2004). It became

apparent from the desktop review that there was an issue concerning deficit or negative language in the pass descriptor. For example, in a rubric to assess a literature review—the following descriptor was included in the ‘pass standard’: “*Organization needs improvement; more than two incomplete sentences; lacks introduction, summary or conclusion; [and], somewhat logical review table*”. Arguably, a graduate who cannot write an essay with an introduction and conclusion is not meeting the AQF standard of “well developed cognitive, technical and communication skills” (Australian Qualifications Council, 2013, p. 36). This standard descriptor was more indicative of a failing standard. In fact, the minimum standards articulated in the AQF (Australian Qualifications Council, 2013) are quite rigorous, and some of the rubrics reviewed did not meet this level of rigour.

Stage 2: Design Elements

The next stage in the development of the *Rubric Creator* was to identify design elements and then construct a tool that would address the challenges identified in Stage 1. Design elements included the:

1. Health Promotion discipline graduate competencies (Australian Health Promotion Association, 2009; Barry, 2010);
2. Assessment non-negotiables (Readman & Allen, 2013);
3. USC’s Graduate Attributes (University of the Sunshine Coast, 2013a);
4. Bloom’s Revised Taxonomy of Educational Objectives (Krathwohl, 2002); and
5. *Australian Qualifications Framework (AQF) qualification type learning outcome descriptors* Level 7 for the Bachelor level programs and Level 9 for the Masters by coursework level programs (Australian Qualifications Council, 2013).

The nested nature and relationship between these design elements and the logic for the construction of the *Rubric Creator* is presented in Fig. 5.3.

The driving framework for the construction of the *Rubric Creator* was USC’s GA’s (University of the Sunshine Coast, 2013a). The AQF qualifi-

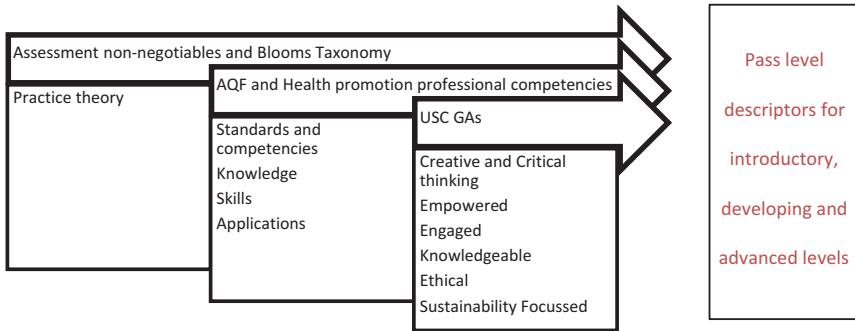


Fig. 5.3 Nested *Rubric Creator* design elements

cation type standard descriptors of knowledge, skills and applications (Australian Qualifications Council, 2013), and discipline specific industry standards and competencies (Australian Health Promotion Association, 2009; Barry, 2010) were then simultaneously mapped against each GA. *Bloom's Revised Taxonomy of Educational Objectives* (Krathwohl, 2002) (knowledge and understanding, application and analysis, synthesis, evaluation and creation) was then used to explicate the GA criterion. For example, the GA *Empowered* encompassed all application skills, as defined by the health promotion discipline. The sophistication of skills were described using Blooms Taxonomy and the standards were aligned with the AQF qualification type (Australian Qualifications Council, 2013). Generic rubric criterion then formed the basis of the program level rubric criterion, and quality descriptors of standards for high distinction, distinction, credit, pass and fail were applied to each criterion using adjectives that reflected these levels.

Two separate *Rubric Creators* were developed—one for the undergraduate Bachelor Degree, which reflected AQF Level 7 standards and one for the Master's Degree, which reflected AQF Level 9 standards. Where applicable (advanced 7 and 9) to the criteria, the AQF standards were taken to represent the pass level standard descriptor. Standard descriptors were then worked up and down from the pass level to show gradation of quality from “fail” to “high distinction”. An example of AQF positioning and standard descriptors for a criterion is presented in Table 5.1.

Table 5.1 Excerpt from *Rubric Creator* with bold indicating standard descriptors

Bloom's Taxonomy	Criteria	High distinction	Distinction	Credit	Pass	Fail
Knowledge and understanding	Knowledgeable (models of health)	Demonstration of an advanced critical evaluation of the broad and coherent body of knowledge that underpins models of health	Extensively evaluates the broad and coherent body of knowledge underpinning models of health	Clearly connects disciplinary and cross disciplinary knowledge that underpins models of health	Demonstrates a broad and coherent body of knowledge underpinning models of health AQF Level 7	Limited understanding of a broad and coherent body of knowledge underpinning models of health

The *Rubric Creator* was expressed in sufficiently broad terms to allow for specific health promotion discipline competencies to be incorporated when writing the task-specific rubric by academics for individual assessment tasks. For example, in Table 5.1, if a task required students to demonstrate their knowledge and understanding of different models of health, the general criteria would be modified to reflect this. The Bachelor level degree *Rubric Creator* contained seven knowledge and understanding criteria, ten application and analysis criteria, and eight synthesis, evaluation and creation criteria. The Master's level degree *Rubric Creator* contained six knowledge and understanding criteria, ten application and analysis criteria, and eight synthesis, evaluation and creation criteria.

Rubric Creator Trial and Feedback

The Health Promotion academic team used the *Rubric Creator* to develop their course level assessment task rubrics over three teaching semesters from semester two 2013 to the end of 2014. In general, two strategies were adopted to develop task rubrics using the resource. The first strategy was for academics to draft their task rubrics then distribute them to other team members for peer review and feedback. The second strategy was for academics to buddy with one another to develop task rubrics and then provide them to the broader team for feedback. At the end of the teaching semesters academics were asked to provide feedback via written responses to some questions related to their perceptions about how using the *Rubric Creator* was impacting their assessment practice. Six of the eight academics responded to the request for feedback—three full-time and three part-time/sessional. The development team then used Readman and Allen's (2013) non-negotiables as a way of framing and interpreting the feedback.

All academics responded that they had used the *Rubric Creator* to devise rubrics for the assessment tasks in their respective courses over the three semesters. All reported that it was a useful tool for them in their professional work and agreed that it helped to ensure consistency of language and standards across the whole program. They also reported that the rubrics, once created, made the "marking process more transparent,

consistent and equitable” (academic quote). Some reported that it made the process of creating rubrics for assessment tasks a faster process, while others felt it was more time consuming initially, but that they become quicker and more skilled with the process over time.

All academics reported that the *Rubric Creator* increased their confidence and competence in creating their own rubrics. This had a follow-on effect of increasing their confidence in discussing rubrics with students in their classes. This sentiment is encapsulated by a full time academic who stated:

As I used the rubric bank more, I was more confident to think through the task in more detail prior and adjust the meaning to the task. It did make me think about what I was actually going to assess and what I would grade on, which meant I could ‘translate’ the rubric in lay terms to the students in class and be confident that I was logically and transparently transferring this to the marking rubric.

Confidence in producing rubrics that academics knew were aligned to USC’s GA’s and discipline competencies was reported as a strength of using the *Rubric Creator*. One academic reported that it assisted her to be more independent in creating rubrics and more confident that the standards were aligned with the AQF standards, which is consistent with Readman and Allen’s (2013) alignment non-negotiable.

Academics reported an increase in the number of professional conversations they had with colleagues and students about standard descriptors and what they meant. This provides evidence of enhanced academic engagement in assessment as learning. The impact on academics is summarised by a full time academic reflecting that there was an increase in professional dialogue that occurred both formally and informally during team meetings; via email sharing rubrics to review/critique each other’s work; and at one on one meetings to discuss particular task rubrics. In her opinion:

...the bank certainly contributed to creating a culture of sharing rubrics among the team which came with more dialogue and critique of what was being assessed...this process has contributed to a greater understanding across team

members about what is being taught and assessed in other courses (other than their own) and how courses align at a program level.

Other academics reported struggling with understanding the exact meaning of the quality descriptors used in the rubrics e.g. proficiently, effectively, coherently etc. This was reported by academics that placed the rubrics on Blackboard and encouraged students to have their own conversations with tutors about their meaning with no formal or structured process around unpacking them. The lack of clarity around terminology is a perennial issue with rubrics whereby meaning can be very subjective. Meaning for students is dependent on the lecturer/tutor engaging students in conversations around what they expect to see in a “proficient analysis” compared to an “effective analysis” for example, and to ensure that all have a shared understanding of that meaning and how that would be evidenced in the context of a specific assessment task.

Some academics reported using the rubric as a teaching tool by providing students with examples of past student work or by creating their own example student responses and using the current rubric to unpack the terminology. These academics reported students seemed to have an increased understanding of the standards, their meaning and lecturer/tutor expectations. Those who reported using the rubrics in this way also reported having students mark past student work and then discuss the grades given with reference to the rubrics, thus becoming a useful formative assessment activity that provided valuable feedback to students on their learning. This experience-based practice as described in Rust et al. (2003) allows students and academics to develop a stronger understanding of the explicit and tacit expectations found in rubrics.

Problems identified with the *Rubric Creator* by the academic team included not being able to find the descriptor that ‘best fit’ the task requirements. Academics shared that a “perfect fit” was not always available, however in most cases an “appropriate fit” could be found. Others reported that having too many descriptors was problematic, while conversely, others reported that there were not enough descriptors for their purposes. Overall the feedback from the academics was overwhelmingly positive and useful, and will inform the second stage development and refinement of the *Rubric Creator*.

Section 3: Best Practice Assessment Reflection

The assessment principle of constructive alignment in curriculum design broadly refers to the explicit connection between learning activities, the assessment tasks and their related assessment standards with the intended learning outcomes (Angelo, 2012; Readman & Allen, 2013), and that this alignment is clearly understood by the student (Biggs & Tang, 2007). With respect to assessment, Biggs and Tang (2007) posit key elements of alignment to include a standards model of assessment and the adoption of a hermeneutic approach. The standards model of assessment is one that is criterion-referenced and focuses on assessing ‘... how well an individual meets the criteria of learning that have been set’ (Biggs & Tang, 2007, p. 51). A hermeneutic approach refers to the use of learning taxonomies to make holistic judgements about learning (Biggs & Tang, 2007). Rubrics are used to present criteria related to intended learning outcomes and associated standards against which judgements about performance can be made (Biggs & Tang, 2007; Boud, 2000). The *Rubric Creator* includes program level criteria and standards descriptors from high distinction through to fail. In the design of the *Rubric Creator* Bloom’s *Taxonomy of Revised Learning Objectives* (Krathwohl, 2002) was used as the basis for generic criterion, that coupled with and reflected the content of other design elements. The taxonomy provided the hierarchical framework for generating criteria that covered the full spectrum and increasing complexity of learning (Krathwohl, 2002). The use of the taxonomy also served as the mechanism to transition from the mapping process through to the construction of the *Rubric Creator*.

Boud (2000) emphasises the important role of the higher education sector in preparing students for lifelong learning in a learning society and argues that sustainable assessment is critical to such an outcome. He describes sustainable assessment as that which ‘...encompasses the knowledge, skills and predispositions required to support lifelong learning activities’ (p. 151). As such, assessment focuses on both meeting learner’s current as well as their future learning needs via formal and informal learning experiences contextualised in complex real world situations (Boud, 2000). With respect to authentic and contextualised assessment

(Boud, 2000; Sambell, McDowell, & Montgomery, 2013) the *Rubric Creator* does not identify specific authentic assessment types, nor contextualise them. At the program level it may not be possible or appropriate to incorporate such specificity. This needs further consideration and may be partly attended to by the inclusion of discipline specific competencies and the institutional graduate attributes (work force ready skills and qualities) that should be present in an authentic task. Clearly, Boud's emphasis on assessment that meets the current and future needs of students (Boud, 2000) is a convincing argument and supports the importance of this consideration. For example, the specific generic qualities and skills, and the discipline specific attitudes, knowledge and skills that students develop through their tertiary program could be mapped to certain assessment types like work place learning experiences or real-world tasks in health promotion. Boud (2000) also argues that to be sustainable, assessment needs to be in the hands of learners rather than assessors, and emphasises the importance of formative assessment in engaging students in learning. On reflection, these aspects of sustainable assessment should be present in the next iteration of the *Rubric Creator*, as well as a review of how the student is positioned in the process.

A desired outcome of the *Rubric Creator* was enhanced understanding of and consistency in the interpretation of program assessment criteria among health promotion academics, and assurance criteria was transparent, aligned, discipline specific and future focussed. Following Rust et al. (2003) the Health Promotion team wanted to support students to better understand the purpose of their assessment, and have greater understanding about how they were to be assessed. The fact that this development process concomitantly increased the *confidence and willingness* in academics making and consulting on judgements made in relation to their assessment tasks was a bonus. In the end, the production of the *Rubric Creator* was a useful professional development process. Often the assessment non-negotiables would emerge naturally and without too much extra attention. The practicality of transparency, authenticity, feedback and feed forward, alignment and engagement were self-evident and retrospectively not surprising.

Conclusion

This quality curriculum assessment practice example has described and reflected on the journey of embedding a programmatic assessment approach for work ready health promotion graduates. This journey began with a macro level curriculum renewal process initiated by a new set of graduate attributes. The journey culminated in a programmatic level assessment *Rubric Creator* that has now been used over three semesters by the USC health promotion academic team.

The benefits of this work are multifaceted and have resulted in positive outcomes for health promotion students and academics. A key element of this undertaking has been the increased dialogue and deep consultation required in the production of the *Rubric Creator*. The *Rubric Creator* is obviously an ongoing and iterative product being refined and improved with use. The salient feature was the increased understanding of Health Promotion competencies and work ready attributes by the academic team, and how these are supported and framed by TEQSA and USC graduate attribute frameworks. Feedback from academic users indicates the *Rubric Creator* has supported them in the development of their assessment practice, particularly confidence in developing task level rubrics, and engaging in assessment related conversations with both colleagues and students. In turn, it is our hope that this learning will contribute to greater clarity and transparency for students and the broader health promotion profession about what is assessed and how assessment happens in the USC Health Promotion programs.

The development of the *Rubric Creator* using Readman and Allen's (2013) best practice non-negotiable assessment principles gives us confidence about the integrity of the *Rubric Creator* process. We believe this experience has transferable experiences for other professional disciplines looking towards curriculum renewal and enhancing student learning experiences. Elements of quality assessment practice for further development include: (1) increasing the student self-assessment process using rubrics; (2) ongoing dialogue between academics aligning vertical and horizontal assessment across the program; and (3) more frequent discussions with external health promotion industry stakeholders regarding competency evaluation and authentic task development.

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6

Towards a Culturally Inclusive Model of Care: Quality Practice and Care Through the Lens of a Practising Nurse

Natalie Goldman and Karen Trimmer

Introduction

The environmental context of nursing has changed significantly over the past twenty years and both multiculturalism and interculturalism have been important concepts for nursing and nurse education. Whilst both concepts have played an important role in the development of government policies related to health and in approaches to higher education and training in the nursing profession, they cannot be used interchangeably. Sarmiento (2014, p. 608) comments: ‘... *the concept of multiculturalism prevails in the Anglo Saxon world, where groups of different cultural matrices are integrated ... in order to ensure social cohesion, but not inclusion*’. ‘Interculturalism’ on the other hand, is a more inclusive term, defined by

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Cantle¹ '*... is about changing mindsets by creating new opportunities across cultures to support intercultural activity and it's about thinking, planning and acting interculturally*' (Cantle, 2012). To be inclusive of all, a change in styles of teaching pre-service nurses is necessary to ensure a non-static view of culture. Also, developing a culturally-inclusive model of care, where the formulation of quality care is negotiated and shared between service provider and patient.

Perceived realities of any given situation are not homogenous across cultures and basic responses to realities are subject to social circumstances and social conditioning (Bloomfield, 1994; Brady, 2010; Broom, Good, Kirby, & Lwin, 2013; Duffy, 2001; Edwards, 2014; Sarmiento, 2014). Edwards (p. 87) further explains that a nurse acts: '*... by reference to perception of a mere reality, together with their possession of relevant theoretical knowledge and moral commitment to the health of the patient*'. There is recognition of the need for awareness of cultural differences in Australia since the government announced the 'closing the gap' program in 2008 for Aboriginal people (Closing the Gap Clearinghouse, 2013; COAG, 2012). In addition, globalisation has increased the number of overseas students in universities and the number of international nurses working in Australia (Changfu, Mei, & Chen, 2012; Cortés & Pan, 2014; Durey et al., 2008; Guo, Cockburn-Wootten, & Munshi, 2014), ultimately enduring their own cultural backgrounds. That is to say, their own experiences and backgrounds are likely to affect their delivery of 'care' to the patient. A relatively recent television documentary on the Special Broadcasting Service Corporation (Martin, 2014) called 'First Contact', investigated how individuals responded when first exposed to Aboriginal communities in isolated settings. The documentary recorded the response of some individuals which aligned with our own experience of how some nurses respond in similar situations. There are a number of nurses who have never encountered Aboriginal communities and as a consequence, lack insight into some of the problematic circumstances which confront individuals and communities on a daily basis. Service providers may be shocked by living conditions and the lifestyle led within some

¹ See website <http://tedcantle.co.uk/publications/about-interculturalism/>

communities. One may also say there is limited appreciation of the cultural contexts and circumstances of patients and nurses who have moved to Australia from many diverse countries across the globe.

An Australian nurse is more likely to be addressing patient needs through policies and protocols that are aligned with their employing body that may be reactionary to past events and incidents. This nurse will have learnt how to care for people through education which includes studies of human behaviour, culture and scientific expertise, and they may follow an approach which is aligned with the Western model (Lee, Steketee, Rogers, & Moran, 2013). The nurse may not have adapted to express their professional care in a manner that suits a multitude of cultures. We contend that the use of the Western model, in its entirety, is not the most effective for the future of nursing. Especially with regard to achieving quality care, given the changing nature of student and patient characteristics. Models of care need to incorporate a broader range of interpretations of what constitutes quality care. There also needs to be more development in a range of pedagogical approaches to assist nurses to gain cultural awareness, communication skills and clinical approaches to assist themselves, their patients and colleagues in providing optimum individualised care to the patient.

Literature

The literature describes a need for change in nursing education to account for cultural differences (ABS, 2008; Alsharif, 2012; AMA, 2014; ANMAC, 2012; Arieli, Mashiach, Hirschfeld, & Friedman, 2012; Australian Indigenous HealthInfoNet, 2014; Closing the Gap Clearinghouse, 2013; Cuellar, Walsh Brennan, Vito, & de Leon Siantz, 2008; Donate-Bartfield & Lausten, 2002; Duffy, 2001; Harding, 2013; Hoare, 2013; Jones, Bond, & Mancini, 1998; Lee et al., 2013; Long, 2012; McDonald, 2006; Rosenkoetter & Milstead, 2010; Universities Australia, 2011). There is a concern, however, if approached at a superficial level, it may actually increase the distance between cultures because of its failure to address underlying social conditions and issues of cultural acceptance and integration. Historically, nursing education and practice

arose from a sense of duty, where the nurse was considered a quality nurse if she followed rules (Donley, 1985; McCurry, Revell, & Roy, 2010). Nursing today is mandated by traditionally established virtues and best practice based on scientific principles (Wake, 2012). Importantly, patients desire the caring compassionate nurse who has the time to listen to them, over the skilled, efficient, and possibly officious one (John, Kawachi, Lathan, & Ayanian, 2014). The Western model has been taught to medical professionals for some time (Crowden, 1994; Harding, 2013). However, we now realise in order to address the health needs of people who do not follow Western culture per se, we need to review the very essence of belief systems underlying the provision of quality care (Australian Indigenous HealthInfoNet, 2014; Backof & Martin, 1991; De & Richardson, 2008; Harding, 2013; McCurry et al., 2010; Walsh Brennan & Cotter, 2008). Whilst acknowledging principles of transformative education, there needs to be further investigation into commonalities in humans, rather than just seeing the differences in cultures (Duffy, 2001; Guo et al., 2014).

Experience from the Field

Personal experiences demonstrate how misaligned decisions may develop when nurses (and other members of the health profession) deal with cultures outside of the Western model, as outlined in the following narrative which describes a situation involving an Aboriginal boy from a small rural town in Australia. He had initially presented with a pimple-like wound on his upper inner thigh, which had grown and developed into a large abscess. Attempts at the local hospital to drain the abscess were unsuccessful. It did not heal, the mass continued to grow and swell, and there were concerns regarding development of septicaemia. If the infection spread systemically, the worst scenario for such a case could be fatal. In some cases, this can occur rather rapidly.² Medical staff reviewed the

² For a case example see the Coroner's Court of Western Australia Inquest into the Death of Amanda Dana TAUAI http://www.coronerscourt.wa.gov.au/1/inquest_into_the_death_of_amanda_dana_tauai.aspx?uid=1901-1986-3149-8255).

wound and deemed surgical cleaning was required to remove the source of infection.³ However, as the procedure would require a general anaesthetic, it could only be done at a larger hospital, and should be done as soon as possible. Therefore, it was decided the child should be moved to the city immediately. Generally, the child was otherwise well physically. Unfortunately, those caring for him directly had other major life events to deal with and were unable to be with him on the proposed transfer day. He was begging a female Aboriginal volunteer ambulance officer, who was known to him, to come along on the journey, but she refused for her own reasons. He reached out and hung on to her, she struggled to pull herself free from his out-stretched arms. A nurse (Anglo Saxon) stood by holding tightly onto him so that he did not fall from the bed. The information given on clinical handover included that he was violent and aggressive. However, he presented as terrified and distressed. He had been given a large amount of sedatives and still was unsettled and thrashing about. Later he revealed that his bladder was also very full; it was not until he was alone with the transport nurse that he yelled out that he needed to: *'take piss'*. The medical officers who were present decided managing his behaviour was difficult—they thought impossible (as did the other health professionals present), and that he needed to be transported without any complications. In addition, the patient's reported violent behaviour added a further (perceived) dilemma for the attending health-care staff as there are industry regulations surrounding unruly patients during transport. So, under duty of care (common law principles, case-based, care must be provided to prevent foreseeable injury), the decision was made the boy required transportation to the hospital. However, as he had eaten a few hours earlier, he could not be sedated any further. On deliberation, it was thought if he were intubated, complications of aspiration would be prevented and therefore he could be transported safely. It seemed to be a logical decision at the time, in view of the situation. However, such a proposal was invasive and not without risk. On taking a step back, being mindful of the child's state and allowing for cultural,

³As per protocol for abscess formation, for reference information see—The Royal Children's Hospital Clinical Guidelines: http://www.rch.org.au/clinicalguide/guideline_indexCellulitis_and_Skin_Infections/

social and medical dynamics, one wonders if he was not actually as violent and aggressive as he was deemed to be. He had a full bladder, was drowsy from sedatives, had never travelled out of his home town, had never been away from his mother or siblings, had recently lost a close relative and all of his family were organising to attend the funeral. Additionally, his father had not long ago been incarcerated, and he did not like to talk to a large group of strangers (many healthcare professionals were around his bed). He had been in hospital in the town for a few days and had walked out the day before without permission, returning home to his mother. He wanted to make sure she was okay and check in on his younger siblings (he was the eldest child and in light of his father's absence from home, it would fall to him to be the 'man of the house' and to ensure his family's safety and wellbeing). Fortunately, luck intervened. The tertiary children's hospital communicated they would not take him if he was intubated as there were no beds available for the level of care required. The transport team were happy to travel with him in his current state, and the nurse (I) walked up and talked to him at his bed to further assess him. One of the doctors gave him an intravenous medicine to sedate him. He fell 'asleep' following administration of this. He was loaded for transport and the nurse sat with him alone for a moment, he started to rouse, he was reassured, though at this point he began yelling quite hysterically, this is when he said he needed to urinate (he didn't feel comfortable to say in front of everyone). Again, his behaviour could easily have escalated if his needs were not addressed. Once he had passed urine, he calmed down and talked. He started to cry. He was tied to the bed with restraints, in case he became violent and aggressive. The nurse continued to sit with him and held his hand as he cried more and told of his family's story. He eventually fell asleep. The doctor started to chatter about what he knew of the child's story and inadvertently revealed his mother would have been able to accompany him in one or two days' time as she needed to attend the funeral of a close relative. The question has to be asked; if the child had been transported the following day, would it have adversely impacted on his medical condition? The wound may have caused systemic infection and it may not have. He was on antibiotic treatment, which would have given him some protection. Why were the medics so adamant he travel? Why were his family not with him? How

was it that people he knew were unable to help him? Many factors were complicating decisions which were aimed at looking after the child's best interests. Reasonable care may have just been played out in an overzealous way, the flipside of 'good practice'.⁴

A person not so compelled by culture may have declined attending the funeral. However, The Mother still had the care of the remaining siblings to consider. An Anglo Saxon family is generally nuclear. In Aboriginal culture, the child's care is the responsibility of a group of people (Dietsch et al., 2011; Kiraly, James, & Humphreys, 2014; McConvell, Keen, & Hendery, 2013; Schneider & Shapiro, 1989). Often when the child is assessed, their primary caregivers have been asked to tell their story several times and might be tired and frustrated with no answers and may even feel doubted for what they are saying. The family listened to the doctor, but the doctor and the attending team did not consider or interpret the situation culturally. The family were not necessarily negligent of the medical needs of the child. Other coincidental situations held precedence for them. Those situations were not held in as high regard by the attending healthcare professionals. If the doctors had more cultural insight, they would have allowed the mother and other community members to attend the funeral, as it was culturally important for them to do so. The child's medical condition may not have been considered quite so urgent if the situation was viewed as a whole entity.

Sometimes we seek to change the individual or the situation to suit our model of practice. We attempt to align our care with the model we were taught, usually the dominant culture. If we could step away and walk around a situation, applying principles of practice with an adaptive approach, we may see the person in this story, the child (Doris & Plakias, 2008; Duffy, 2001; Government of Western Australia, 2012; Hafferty, 1998; McGregor, 1996). Rather than rushing into taking the child to definitive care, an Aboriginal response would have been to get the 'mob' together and discuss the situation. The mother was compliant with the care of her child and she had mitigating social circumstances which were

⁴For further reading see—Samanta & Samanta, 2003; Rogers v Whitaker (1992) 175 CLR 479; Alexander v Heise [2001] NSWSC 69. S; Roylance v General Medical Council [2000] 1 AC 311; Fitzgerald v The Medical Board of Queensland [2010] QCAT 565.

impacting on her sound decision making. Her culture is to listen to her 'elders', or in this case, the 'elders' were the medical profession. The child was completely overwhelmed. The community was grieving for a lost member. The healthcare team wanted the child to have good health care. Steps to account for all of the factors need to be considered as cultural block may have severe adverse outcomes in such situations.

Another example is when a health professional approached an adult male Aboriginal to attend to a wound. The man did not like going to hospital as the people there did not understand him. The doctor in this situation did not like Aboriginals as she perceived they were often violent and frightened her (she was from a European background). Both sensed the other's dislike of the situation and it was escalating to a dislike of each other. As the doctor started to put a needle to his wound, the man yelled at her, although her perception was he had agreed for her to proceed. The commonality was they were both frightened. He was loud and vocal, as is common for his culture in the given situation. She was meek and demure (culturally conditioned), lost to his response and beginning to withdraw. He was about to leave yelling and screaming, without being attended. Seeking communication, he was spoken to by another staff member (myself). He was asked why he had attended and the implication was made that perhaps he was frightened. He acknowledged this was the case and dropped his tense shoulders to breathe. The doctor nodded at the change in the situation. The wound was sutured, and the man left laughing.

Duffy (2001, p. 489) comments that '...cultural education be redesigned to emphasize equality and inclusiveness ... universities have a social responsibility to prepare students who are learned and caring citizens in multicultural communities ... when culture is viewed through an individual's global lens, stereotypes about cultural groups begin to erode and be replaced by individual identities'. Models and tools have been developed to teach transcultural care (Halloran, 2009; Maier-Lorentz, 2008), it would be of value to undertake further research into the use of some of these. The Aboriginal Cultural Learning Framework 2012–2016 (Department of Health, 2012) acknowledges that embedding cultural learning within health is a practical strategy to close the gap in Aboriginal health outcomes.

Higher Education for the Nursing Profession

In response to the need for culturally inclusive patient care, many higher education institutions have introduced cultural awareness and/or competency courses which focus on Australian peoples. Others offer courses which consider cultural diversity more broadly. A model adopted by a number of universities is to include at least one cultural unit in the early years of their undergraduate nursing programs, Australian universities have this information on their websites. There are also short courses available for health professionals to participate in.⁵ Such programs and courses assist in developing cultural awareness and competency which can contribute to the continuing professional development of a nurse. However, the preceding narrative provides evidence from the perspective of the field, there has been limited behavioural change to date across the profession. It is important to note that cultural differences are not limited to our own indigenous people; there are many different cultures within Australia, both as patients and as people caring for patients (AIHW, 2012). This situation is similar to what is being experienced in other countries. Easterby et al. (2012, p. 84) explains that in the United States ‘... nursing students who are prepared to care for culturally diverse populations will help to facilitate access to preventative, primary, health maintenance, and acute/chronic health care services for these individuals and families’.

Higher education today has evolved from a didactic approach to constructivism. That is, ‘knowledge is obtained, and understanding is expanded through active construction and reconstruction of mental frameworks’, and that ‘learning is not a passive process of simply receiving information—rather it involves deliberate, progressive construction and deepening of meaning’ (Killen, 2007, pp. 4–5, 7). From this perspective, learning and the educative process is a way of making meaning that is socially situated and can only be understood in terms of the specific contexts in which it takes place. Within the constructivist theory of learning even scientific knowledge is not objective or value free. Recognition

⁵For example: Services for Australian Rural and Remote Allied Health, SARRAH, see website: <http://sarrah.org.au/>

of the value laden nature of knowledge (Doppelt, 2008) imposes a limitation on teaching scientific knowledge in that it cannot, on its own, provide nurses with all of the information that is relevant to be interpreted and applied in any given individual and unique patient context. The scientific knowledge needs to be understood and applied through a social and interactive process which involves negotiation of meaning, its construction by each party in the scenario, including the patient and their family, and its reconstruction to account for cultural differences.

Currently in many higher education courses, students are expected to do self-directed learning, including on-line tuition and simulated situations with manikins in an effort to manage resources (Richardson, Grose, Doman, & Kelsey, 2014; Russell, Gregory, Care, & Hultin, 2007). These trends tend to reduce physical contact and exposure to senses such as hearing, seeing and speaking. This introduces a limitation in negotiation of meaning in that being physically present enables both direct verbal communication and visualisation of non-verbal cues, whereas minimising physical contact means these are not witnessed and is in contrast to the findings of Loue, Wilson-Delfosse, and Limbach (2015; also see Sharifian, 2010). Their paper suggests increased contact with diverse patients, along with increased opportunities to practice communication skills may be critical to student awareness and comfort in interacting with diverse populations. By reducing contact, a dilemma is created in how a nurse can follow up on differences in cues that they are not familiar with (based on their cultural learnings), or recognise them if they are not present within their learning environment (active learning). This leads to the question—is the content of courses more important than the teaching? If so, what mix should be sought? Should social and cultural norms be taught? The blending of many cultures globally and locally may well mean that current practices need to be deconstructed to expose deep-seated contradictions. However, any program will be reliant to some extent on a dominant cultural background for teaching styles and format, regardless of intent.

There could be value in a teaching program that provides a number of methods of teaching (Kools, Chimwaza, & Macha, 2015; Seipold & Pachler, 2011). Scenario-based training, such as sharing some stories for our Aboriginal counterparts (Carey, 2011; Kutob et al., 2013; Martin & Kipling, 2006; Pijl-Zieber & Hagen, 2011; Richardson et al., 2014; Riley,

Howard-Wagner, & Mooney, 2015; Riley, Howard-Wagner, Mooney, & Kutay, 2013), some rote learning which may be a preferred approach for some Asian cultures (Changfu et al., 2012; Lund, Berland, & Huda, 2013; Tan & Pillay, 2008) and in addition, critical thinking for individual democratic learning development (Bleakley, 2012; Frost & Regehr, 2013; Gainer, 2012) could be utilised. Exposure to different cultures is not always possible, so readings which promote cultural learning also need to be further explored and analysed in class discussions (Halloran, 2009). Consider as part of teaching, video recorded interviews with people discussing their culture—what is acceptable, what is offensive and who they feel comfortable being around (male/female, doctor/nurse etc.). Recording interviews with candidates, posing the same set of questions to people of different cultures and backgrounds and reviewing the collected responses. Share the interviewees' backgrounds (whether it is their home country and how they have acclimated to Australia or an Australian person with a rural background versus their city counterpart). The notion is to deconstruct idealisms and draw out the essential elements of any given situation, such as in the narratives in this chapter. To do this, one must explore the history of Western ideological theory, thereby discovering its foundation and bring it into question. Deconstruction (Jacques Derrida, 1930–2004) is a rhetorical technique, a pedagogy that challenges the notion of truth and objectivity and seeks to '*...expose the antagonisms within Western philosophy...*' (Newman, 2001, p. 1). Derrideanism has social value exhibiting a spirit of tolerance and of respect for difference (Direk, 2014; Hunter, 2008; Newman, 2001; Rajagopalan, 2007; Winter, 2007). Value judgements, such as those expressed by the healthcare profession, may be contextualised, rather than seen as truths. The importance of re-empowerment of the oppressed, the non-dominate culture, are described in the works of Michel Foucault (15 October 1926–25 June 1984). He examined how power is deployed and how texts contribute to social structure; a suggestion is to redefine the *regime of truth* (Foucault, 1991). Perhaps the works of these philosophers may be the platform for a modern approach to nurse education.

With the above in mind, a teaching plan utilising clinical reasoning practices has been explored for the reader to peruse (see Appendix). Cognitive forcing is a strategy which enables a healthcare worker to think beyond the initial interpretation of the presenting patient (Croskerry, 2003).

Reflection and Conclusion

The ideology of patient-centred care (Bleakley, 2012), is to approach the patient not the problem. This approach places the cultural identity and needs of the patient at the forefront, and the treatment is therefore a holistic approach to the person and the presenting health problem. The Australian Commission on Safety and Quality in Health Care (2011) explains that a '*... patient-centred approach to health care is an empathy with the patient and an ability to stand in the shoes of the patient ... It is an inherent attitude that can instinctively consider how another person will react when addressed in words or by some deed. An attitude which accepts that the patient has a mind as well as a body*' (p. 14). This approach does not completely take away the responsibilities of the patient to communicate effectively, as and where they are able. It also does not imply that a nurse will always have an attentive state of being with a busy and hectic case load of patients and (Hollanda, Allena, & Coopera, 2013) recognise that burn-out is not uncommon. However, it does suggest the concept of transcultural nursing needs to be specifically taught in higher education nursing programs. Such measures will ensure increased awareness and understanding of cultural diversity among caregivers prior to service on the units and wards. Thus, making the process of providing culturally-appropriate care more intuitive, as opposed to a task requiring a high level of mental cognition and efficiency.

The concept of a nursing workforce which is competent in cultural care is being addressed in theory in a range of higher education programs through targeted courses and through embedding of cultural awareness within other theoretical courses. However, from the perspective of a practicing nurse, to date there is limited evidence that such training is reaching the clinical area in the practice of nursing. By addressing further development of nurse-training programmes and fine-tuning the skill of culturally-competent nursing in a broad range of contexts, some progress will be made in meeting the needs of patients, communities and nurses themselves.

Appendix: Teaching Episode

NAME OF LESSON:

Use of clinical reasoning strategy *Cognitive Forcing* to recognise errors in biopsychosocial interpretation.

AIM OF LESSON:

Anecdotally clinicians from all disciplines are subject to cognitive biasing when dealing with Aboriginal people. The problem may be related to lack of exposure to populations that live on the fringe of society and the problems that they face. With the use of active control over the cognitive processes engaged in learning (*metacognition*) and cognitive debiasing (*cognitive forcing*), I will progress through a teaching session with undergraduate nurses in their final year of study (whilst they attend Royal Flying Doctors Service Western Operations for Critical Care Practicum) initially applying *Pattern Recognition* in a visual case presentation, moving through to *Knowledge-Reasoning Integration* as the case deepens in understanding of the factors involved with using Western Medicine to treat populations from Aboriginal communities in rural and remote Australia.

LEARNING OBJECTIVES:

At the end of this lesson, students will:

1. Understand and demonstrate clinical reasoning skills in Nursing Practice,
2. Communicate health information and health education in the null form (minus psychosocial bias),
3. Communicate with welcoming consideration, to and about, clients/patients and families,
4. Facilitate conversation around Aboriginal Communities and preconceived perceptions of the people who reside in these communities,
5. Documentation of biopsychosocial concerns in the null form (Nursing Charts, Careplans, Clinical Handover).

STUDENTS' INTEGRATION OF PRIOR KNOWLEDGE:

1. Group participation in tutorial class
2. Explanation of key points prior conducting patient admission assessment

LESSON DETAILS:

Type: Discussion group, visual case study

Total duration of the lesson: 3x 30 minutes (consecutive)

No. of students: up to 5 people

Stage of career: Third year undergraduate Registered Nurse; male & female, 23 – 50+ years old

RESOURCES:

Laptop, projector, WiFi, Pointer, extension cord, MS PowerPoint, USB, whiteboard, duster, markers

FORMATIVE ASSESSMENT:

1. Group participation,
2. Direct questioning,
3. Reflective answers in professional journal (approximately 200 words).

LESSON SEQUENCE		Questions
<p>Introduction (Set)</p> <p>In the tutorial room with whole class:</p> <ul style="list-style-type: none"> Outline aim and objectives of the lesson, Define 'clinical reasoning for decision making on patient care/treatment' – ask class members their thoughts, Discuss clinical reasoning strategies (metacognition, cognitive bias, and so on): SMALL GROUP DISCUSSION – 'Why is clinical reasoning important in nursing practice? Write down at least three clinical reasoning strategies', share experiences, then discuss with class, Problems with cognitive bias ACTIVITY: prior to class, watch 'First Contact', Australian television series, Presented by: Ray Martin (available from http://www.sbs.com.au/shop/product/category/DVDs/10973/First-Contact-DVD-Digital-Download-PPSP). List components of cognitive bias as preconceived ideas (discuss amongst group), Discuss good communication skills and techniques (listening, engage in conversation at eye level, advocacy, collaboration, use of silence, negotiation, face-to-face talk) as tools to reduce cognitive biasing, Discuss effective speaking to clients/patients as a practical method to reduce cognitive biasing. Have student explain to you 'what is therapeutic communication?' (definition, types, results, discuss empathy – may be given as take home assessment prior to class) 	<p>Differentiation</p> <p>Cultural population groups unfamiliar to student:</p> <p>Take time to explain details of social situation of client.</p> <p>Familiarise self with Australian Aboriginal history.</p> <p>Introduction into Australian Healthcare System and availability in remote and rural settings.</p> <p>Small groups.</p>	<p>Questions</p> <p>'Do you engage your client/patient with day-to-day care planning?'</p> <p>'Are you clients/ patients clear on the care and treatment they receive?'</p> <p>'Do you have your clients /patients confirm commitment to treatment/care?'</p> <p>'Explain active listening techniques – paraphrasing, reflecting, clarifying, summarising, empathising, cues.'</p>

<p>Body (Engage)</p>	<p>Simulated clinical setting:</p> <ul style="list-style-type: none"> Handover of case example (possinuse photographs of setting to gain visual imagery) and outline case presentation. <p>Case Study:</p> <p>iSoBAR for Inter-Hospital Transfers:</p> <p>Identify</p> <ul style="list-style-type: none"> Nine years old, male aboriginal child, Speaks a reduced form of English and local Aboriginal dialect Inter-hospital child patient handover/transfer <p>Situation</p> <ul style="list-style-type: none"> Principle diagnosis – swollen infected groin abscess Other diagnoses/problems – nil other medical, has been aggressive, has absconded twice in last two days Reason for transfer – wound needs to be surgically drained in view of potential sepsis, deep, needs anaesthetising, can only be in tertiary centre with anaesthetist and full surgical team on site <p>Observations</p> <ul style="list-style-type: none"> Airway patent; airway management plan & potential airway compromise relayed to transport provider – recently taken diet, requiring heavy sedation to transport in calm state 	<p>One-on-one & small group.</p> <p>Give assessment outline at start of class.</p> <p>Frightened child, perceived difficulty to communicate with health professionals, full bladder, not allowed to walk around to take self to toilet.</p>	<p>*Outline National Clinical Handover Initiative – iSoBAR*;</p>
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	<ul style="list-style-type: none"> • Breathing regular, unlaboured, yelling hysterically at times, crying • Circulation perfused peripherally, left leg swollen at thigh - localised, hot, painful, skin colour at site – pink/brown, full range of movement, able to ambulate • Disability, pain in left groin tolerable, patient refused analgesia; behaviour - emotionally distressed; afebrile – on intravenous antibiotics, IV x 2 peripheral 	
	<p>Background</p> <ul style="list-style-type: none"> • Relevant past medical history – nil significant • Current episode medications – broad spectrum intravenous antibiotic, paracetamol • Relevant social issues – emotional liable, aggressive at times, mother has two younger children, needs to attend funeral tomorrow, cannot travel today, father is in prison, child local to area, mother has given consent for the child to travel • Alerts – mental health concerns, nil clinical - nil drug allergies 	
	<p>Agreed plan</p> <ul style="list-style-type: none"> • Nil specific dietary needs – needs to fast re use of sedation for aeromedical transport, head of bed 45 degrees to maintain clear airway and reduce risk of aspiration, unless has a definitive airway (intubated) • To go to Children's Hospital, reviewing for ventilated bed on ICU – awaiting confirmation of bed 	

	<ul style="list-style-type: none"> • Currently speaking to receiving doctor in the emergency hospital • Can mobilise/ambulate, but is heavily sedated • Mode of transport is fixed wing RFDS aircraft, doctor/nurse flight • Position on stretch with four point restraints to maintain child's safety whilst behaviour is unpredictable and has had sedation • Semi urgent transfer, priority 2 <p>Read back</p> <ul style="list-style-type: none"> • Interventions – previous attempts to drain wound x2, recollection at site, needs to be surgically cleaned, and is on intravenous antibiotics. Is aggressive and abusive. Has recently taken diet <p>Needs further sedation to manage behaviour and consideration needs to be given to prevent aspiration during transport</p> <p>References:</p> <ol style="list-style-type: none"> 1. http://www.safetyandquality.gov.au/our-work/clinical-communications/clinical-handover/national-clinical-handover-initiative-pilot-program/isobar-for-inter-hospital-transfers/ 2. Porteous, J.M., Stewart-Wynne.E.G., Connolly, M. & Crommelin, P. F. (2009). iSoBAR – a concept and handover checklist: the National Clinical Handover Initiative. <i>MJA</i>, 190 (11), s151 – s156. 		
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<p>Skill Building</p>	<p>Clinical Reasoning skill building:</p> <p>Clinical reasoning – Pattern Recognition:</p> <p>Poor compliance, little social support systems, likely to abscond again, concerns re development of septicaemia, if he leaves may exacerbate.</p> <p>Clinical reasoning - Knowledge–Reasoning Integration:</p> <p>At the scene is a local Saint John Ambulance Officer who the child knows personally, he is begging her to come on the journey with him. She is refusing.</p> <p>An Anglo-Saxon nurse is holding his arm as he leans dangerously over the rails, he has physical restraints insitu.</p> <ul style="list-style-type: none"> • this patient has a wound to the thigh, large collection of pur discharge, repeated attempts to drain unsuccessful • stop back, be medic, and reflect • multifactorial social problems at home • child has to be moved to tertiary hospital immediately • child is aggressive, non compliant, has recently eaten, will need to sedate safely so we need to ambulate • child is off the board that he needs to look after his family as 'head of the house' • medical team do not believe that the family have the child, best interest in hand • what else is it play? • what are other alternatives to treatment? • are there other aspects of the family dynamics that need looking into? • what are the cultural norms of the family? (i.e. what values does the patienting hold, as per cultural, specific, principles/values) • check antibiotic cover • is there evidence of infection (asking) signs of systemic infection? • critical thought projection - will 24 hours make any/much difference? <p>Reference:</p> <p>Croskerry, P. (2003). Cognitive forcing strategies in clinical decision making. <i>Annals of Emergency Medicine</i>, 41(1), 110-120. doi:10.1067/em.2003.22</p>
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<p>Closure (Rest)</p>	<p>Afterwards have the student report back on how they felt they went, feedback your assessment:</p> <ul style="list-style-type: none"> • Review: Ask for any questions; name and frame problems - consider the patient's choices, review process and outcome, and how to be interactive and engage with patients from 'foreign' cultures • Eyes: Maintain eye contact • Summary: Ask students to give a short concise summary of what was learned (match to learning objectives - assess for construction of meaning in clinical reasoning, negotiation of common goals and management decisions that may have been made) • Termination: Remember to continue to apply cognitive forcing in clinical settings. 		<p>Do you think you achieved the outcome you were hoping for? What else could you do?</p> <p>*Outline any adjustments you may make when next presented with a cultural different client/patient?</p>
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REFLECTION/EVALUATION:

All students will fill out an evaluation of clinical supervision form

Repeat exercise on the student and assess for variations and improvement on skills

References

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7

Viable Knowledge: Practice Led Learning

Lyn Karstadt

Introduction

A text addressing Higher Education in the development of future professionals would be incomplete without the consideration of the types of knowledge on which professional practice is predicated and the art of communicating that knowledge to the next generation of professionals. Although not all students will have a practical application to their university studies this chapter concentrates on those that do. It is therefore pertinent to a range of professionals, the continuum spanning accountants and architects through nurses and midwives to technical engineers and veterinarians. Each of these groups and many more, have a unique body of knowledge with a direct application to their particular professional behaviour.

Knowledge consists of pieces of information that are explicitly stored in the brain (Wenger, 1998) and are constructed by individual scholars to support their experiences or practice, and by association the complex

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decision making that may be required in that context. The construction of such knowledge is therefore of paramount consideration to all educators within the context of Higher Education.

Viable Knowledge (Von Glasersfeld, 1989) is a concept that addresses the use of such information or knowledge as a unique and personal way of thinking that supports individual experience. Furthermore, an application of the notion of agency (Murphy, 2008) acknowledges that it is the student who constructs meaning from each learning opportunity and selects and refines appropriate knowledge in order to address the individual challenges and dilemmas faced. Such knowledge is invariably context dependent and the context is therefore an integral component when making sense of the situation (*ibid.*), in combination with the individual learner's prior experience, knowledge and understanding.

This chapter is written in the context of Nurse Education and sets out to consider the particular experience of a student nurse. It will address the unique experience of a student within this particular discipline and how the theoretical component of the program can best support the practical application necessary for professional practice. The different types of knowledge within the curriculum will be appraised and a theoretical model supporting the inter-relationship between theory and practice constructed. Finally, an example of how this has been applied to the delivery of a nursing program will be considered, along with the general implications for practice within Higher Education.

The Context

The history of Nurse Education is long and interesting. Extending back to the iconic figure of Florence Nightingale in Europe, the professional trajectory of nursing can be plotted. Developments in the last century have varied across the world, although the challenges facing modern day nurse educators are similar. The context of the research outlined in this chapter is the United Kingdom. In the UK, as in Australia, the rules governing Nurse Education are reviewed every five years or so (ANMAC, 2012; NMC, 2010). In the UK one central tenet has however remained,

and that is that students complete 2300 hours of practice within their three-year program.

Although nursing curricula are similar in Australia and the UK, this detail is a fundamental point of difference, with the curriculum in Australia requiring students to complete only 800 hours. This difference poses many questions outside of the scope of this chapter (Karstadt, Rogers, Ralph, & Lawson, 2015). It is mentioned at this point to allow the reader to contextualise the research presented. The guiding philosophies of the two countries are very similar, each requiring students to have an early exposure to professional experience and sustained periods of practice, particularly toward the end of the program, to allow professional competence to be observed and assessed (ANMAC, 2012; NMC, 2010). Both require the attainment of knowledge in both a theoretical and a practical context.

Knowledge Within the Nursing Curriculum

The knowledge contained within the nursing curriculum is multi-faceted and is drawn from many disciplines. Some of that knowledge is unique to nursing whilst the rest can be categorised as adopted and adapted (McKenna, 1997) depending upon whether it is applicable in its original state or has to be modified or changed to ensure an adequate fit with the individual's experience and expectations. Knowledge is used by students to make sense of their world and is constantly modified in that regard. Within this chapter the knowledge used by the individual student to underpin or explicate their practice is the main concern. This is comfortably conceptualised using the work of Von Glasersfeld (1989) generally and his concept of viable knowledge particularly.

Viable knowledge, we are told, 'is used to navigate the world' and 'is a viable way of dealing with some sector of experience' (*ibid.*, p. 15). It is asserted that such knowledge is constructed by the individual and relies upon an internalised conceptual framework and a match or correspondence between that cognitive structure and what it is supposed to represent. What is presented within the curriculum therefore, must fit the

experience of the student and viable facts must not clash with what is experienced in professional practice.

The work of Von Glasersfeld (*ibid.*) can be used to substantiate the claim that whilst students are undertaking professional placements their viable knowledge remains dynamic, as each time there is a mismatch between their internalised cognitive framework and their experience, the individualised cognitive structure has to be modified and as part of that process knowledge becomes more complex and extended. This is recognised as a product of reflection, and whilst not always observable it can be inferred from subsequent behaviour. Von Glasersfeld's conception of reflection is however different from that developed by Schön (1987, 1988), being an ability of mind rather than one concerned with action and behaviour. His key concept here is operative knowledge which is defined as that that not associated with the retrieval of a particular answer but rather the knowledge of what to do in order to produce that answer.

The value of an internalised cognitive framework is in its adequacy to support experience and the validity of that knowledge with reference to solving the problems encountered by the practitioner. Famously Von Glasersfeld tells us that 'A student's ability to carry out certain activities is never more than a part of what we call competence. The other part is the ability to monitor the activities. To do the right thing is not enough; to be competent, one must also know what one is doing and why it is right' (*ibid.*, p. 13).

Another useful author here is Mezirow (2000) who refers to transformational learning or a change in one's frame of reference. The concept of transformational learning has much in common with viable knowledge, although the focus is the act of learning rather than the resulting knowledge. A highly individualised frame of reference is acquired early in life, via the culture and idiosyncrasies of parents or caretakers, and allows individuals to search for equivalences to interpret the meaning of novel experiences. Mezirow acknowledges that as adults, students make informed decisions, needing not only an awareness of the source and context of the knowledge they are using, but also an ability to critically reflect on the validity of assumptions and premises.

Both Von Glasersfeld (1989) and Mezirow (2000) are corroborated by Murphy (2008) and McCormick and Murphy (2008) who assert that

students actively construct meaning and knowledge, and use problem solving as an adjunct to knowledge construction. All articulate the concept of agency purporting that it is the individual student who construes meaning from their experiences and gains explicit understanding of what and how it is known.

Successful students therefore are progressively observed developing the ability to select knowledge appropriately to enable them to solve the problems and predicaments that they face. In nursing the artistic and the scientific are utilised in equal measure by the individual and both types of knowledge must therefore be acknowledged to be of equal significance.

For ease of discussion the knowledge contained within the curriculum can be categorised in a number of ways and the four ways of knowing offered by Chinn and Kramer (2004) are easily applied here. Predicated upon the work of Carper (1978) who asserted that 'It is the general conception of any field of inquiry that ultimately determine the kind of knowledge that that field aims to develop.... and what kinds of knowledge are held to be of the most value in the discipline of nursing' (p. 13), these fundamental patterns of knowing are considered to be comprehensive. They are asserted to be empirics, the science of nursing; ethics, the moral component of knowledge in nursing; personal knowing in nursing; and aesthetics, the art of nursing. Aesthetics and empirics may be broadly considered as representative of the art and the science.

To come to these conclusions Carper (1978) examined earlier nursing literature and enumerated four fundamental patterns of knowing that are necessary for nursing practice. Chinn and Kramer (2004) then built upon this work using the same categorisation and illuminating each category in turn. Other authors have proposed additions to, or adaptations of, Carper's (1978) model (see, for example, Silva, Sorrell, & Sorrell, 1995; White, 1995) but the model remains widely accepted within nursing communities with the four categories appearing in all curricula, and art and science accepted as core categories.

Chinn and Kramer (2004) represent empirics as the science inherent in nursing practice and aesthetics as the art of nursing, being a combination of knowledge experience intuition and understanding. Aesthetic knowledge is creative and is demonstrated by exquisite judgement that is often unconsciously initiated or intuitive. Such knowing is often acquired

by personal imitation or role modelling of mentors. They (*ibid.*) cite Simpson (1914, p. 135) as saying that ‘such art requires practice and some nurses never acquire it.’ Personal knowing, the third category, is closely aligned to aesthetics and is conceptualised as the component of compassion, whilst the final category ethical knowing is aligned to both aesthetics and empirics and concerns moral philosophy.

If a typical nursing curriculum were to be represented by a continuum the poles of that continuum could be variously labelled. To the left we could write practice and to the right theory. Alternatively, these two terms could be replaced by art and science, know-how and know-that (Eraut, 1994; Eraut, Alderton, Boylan, & Wraight, 1995; Rhyl, 1963), operational and academic (Barnett, 1994), or aesthetics and empirics (Chinn & Kramer, 2004) depending upon whose conceptualisation is being interrogated. The dynamic interface of the theoretical and the practical is the core aim of most nurse educators and to that end contemporary paradigms of nursing will now be discussed.

Paradigms of Nursing

Some years ago, Clarke (1991), then chairperson of the Royal College of Nursing in the UK, identified two ways of looking at nursing; which were later relabelled as paradigms or particular views of the world (Karstadt, 2008). The first viewed nursing as a collection of procedures, requiring some skill, often initiated and directed by others, whilst the second was seen as a particular kind of interpersonal interaction with specific goals, determined by the nurse using clinical judgement based on specific nursing knowledge.

The former recognises only the collaborative role of the nurse and although it values competent performance, understanding of why the task is necessary is not necessarily required, and the knowledge transmitted in the curriculum is not recognised as unique. Within this view nursing has no knowledge base of its own, nor does it need one; skills are essentially manual and technical and reflect the knowledge of other disciplines (Clarke, 1991). The second paradigm, on the other hand, acknowledges thought processes that are identical to those used in medicine,

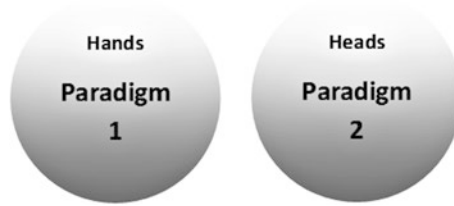


Fig. 7.1 The emerging model showing the mutually exclusive 'Head' and 'Hands' data categories and their relationship to the identified paradigms

requiring sophisticated intellectual and social skills to solve unique and challenging human problems. The paradigm of nursing adopted frames attitudes toward, and the position in society of, the nurse. This conceptualisation or model was later represented visually (Karstadt, 2010) with each of the world views represented by a separate discrete circle (Fig. 7.1).

The two separate circles within the model each represented a separate world view. Congruent with the alternatives described by Clarke, the two conceptions are presented as paradigm one, where nurses are recognised for the roles skills or functions they perform (labelled 'Hands') and paradigm two is where nurses are recognised for their cognitive or problem solving abilities (labelled 'Heads'). The description of these paradigms was first offered, in relation to the maintaining of patient care records (Karstadt, 2008) and also used to illuminate data collected in a piece of case study research.

The Case Study

A case study is represented by Merriam (2009) as a bonded system. Represented visually this would consist of two concentric circles, the outer representing the university and the one inside it the undergraduate nursing program. The very middle of the inner circle could therefore be seen to represent the student experience, which was the focus of the study being interrogated here.

The consideration of practical application alongside theoretical input is a central tenet of Nurse Education and all students must conceptually

organise that which is presented in the classroom, if practice is to be more than merely the act of doing. For many years educators have been primarily concerned with getting knowledge into the heads of the students within their lecture theatres. Von Glasersfeld (1989) however, tells us that such knowledge transfer is far from straight forward and if the teacher is relying solely on linguistic communication confidence in that transfer is, at best, naive.

Von Glasersfeld talks about the 'match or correspondence between cognitive structures and what they are supposed to represent' (ibid.). If this conceptualisation of knowledge is accepted, then it is reasonable to suggest that the student nurse is beginning to build an internal conceptual framework onto which everything else will be hung. The value of such conceptual structures is determined by their experiential adequacy or their goodness of fit with a particular experience, or their viability as a means for solving problems (ibid.). This view of knowledge therefore relies on the student's successfully conceptual organisation of their own experience.

The research discussed here looked at a group of ten first year student nurses undertaking an initial professional placement experience. The students were asked to keep a daily journal chronicling how what they had been taught in the classroom guided their early practice. During initial exposure these students reported, often with some disappointment, that they were observers rather than participants in the care provided. Lave and Wenger (1991) talk of an initial peripheral participation to convey the perception of students during this phase of their education. For them watching takes on a different significance as it provides their first exposure to the community of practice and affords the student with a legitimate, if peripheral, role. For the students in the study this phase was very short.

In the context of the cited study and this chapter I have deemed 'valid knowledge' to be that which is relevant and facilitative from the perspective of practice. To be considered relevant and facilitative the information relayed must enable a cognitive structure that can support what is being encountered in professional practice. It must be viable. In order to fully embrace the term 'viable knowledge' as coined by Von Glasersfeld (1989) within the context of a particular curriculum there must be evidence that conceptual material presented within the classroom has become embedded within the individual student's consciousness and is then used to

make sense of the specific practice situations in which individual students then find themselves; this being the objective of the journals in the study.

Participant observation is encouraged in nursing programs and became a reality for the students in the study very quickly. This is viewed positively for a number of reasons. Firstly, nurses are often defined by what they do and the desire of students to participate is usually high. More significantly however, due to the often-intimate nature of nursing care non-participatory observation is often interpreted by both students and clients as voyeurism which is not perceived by either group to be helpful (Karstadt, 2010). After an initial period of watching and augmenting the original conceptual representation created in the classroom, students were able to represent episodes of practice conceptually and participate appropriately. A similar organisation was noted with reference to professional language acquisition. Students had been introduced to the rudiments of 'nursing language' within the classroom and conceptually built upon this whilst in the practice area. This was clearly illustrated within the journals analysed.

The content of the various units of study encountered by these first-year students was, no doubt, used by the students to make sense of their initial professional experiences. They were noted to use the information contained in the various units studied differentially. For example, the units addressing skills development were used to guide and inform nursing practice in a pragmatic sense whilst the underpinning theoretical units were used more philosophically. The unit addressing sociological concepts such as diversity rights and equality proved to be extremely powerful when considering the perspective of the student and how this changed over the course of the first practice experience, seemingly facilitating a change of perspective or transformational learning as described by Mezirow and Associates (2000). Students clearly demonstrated a change of perspective from that of member of the general public to that of healthcare professional.

The findings relating to the bio scientific concepts introduced within the classroom indicated that theoretical program content was used primarily, not to foster an understanding of the physiological processes that underlie the physical manifestations of illness, but instead to provide a discourse for practice; thus, allowing for effective communication within

the multi-disciplinary team and facilitating acceptance of the student into that team.

A New Paradigm

An interesting consideration was which view of the world best fitted the observations made of these students. They clearly were collaborating within the multi-disciplinary team and taking instructions from others with more experience. The paradigm relating to doing/hands could therefore be seen to apply. However, even during this early exposure to practice, the student journals showed evidence of critical thinking and problem solving with a manipulation of the many concepts that had been introduced within the classroom. The students had little problem using the taught facts to substantiate their actions, even though the connections made by the students were not always those anticipated by their lecturers. Students demonstrated clearly that they were constantly constructing and modifying an internal representation of the world that was being used to guide their experiences and sharpen their skill.

A new paradigm was therefore, of necessity, created. This new paradigm valued both heads and hands and showed an interconnection of the two original world views. The visual representation of this paradigm was depicted simply as two overlapping circles (see Fig. 7.2), with the intersection labelled as viable knowledge.

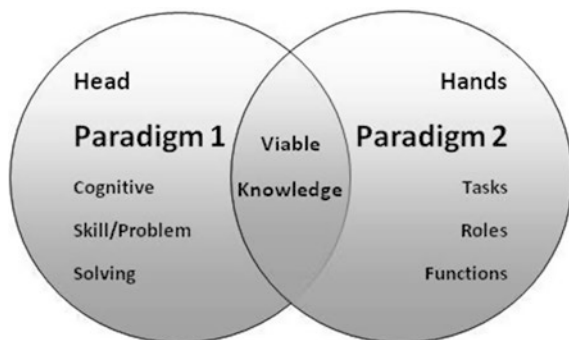


Fig. 7.2 The emerging model showing the intersection of doing and thinking or the 'head' and the 'hands' to give concept of viable knowledge

Consequential Changes to the Curriculum

When these particular findings were shared with the relevant teaching team they were immediately interested, and not totally surprised. On considering how a wider application of the taught material could be facilitated in practice, a plan to modify the structure of the taught unit was formulated by the teachers. These changes were instigated not only as a reaction to the findings of the study but also in response to formal student evaluations, which had indicated that, in the opinion of the students, unit content did not always relate well to the practice of nursing.

The presentation of the unit was therefore revisited by the teaching team with a desire to maximize synergies with the practice of nursing. Previously the anatomy and physiology contained within the program had been presented using the scientific concepts to structure the timetable. In this way students were first introduced to the properties of the cell, followed by the properties of tissues then organs, systems of the body and finally the whole body was addressed. From a sociological perspective the teaching team were delivering curriculum categorized as a 'collection' curriculum (Bernstein, 1975). In this type of presentation, the discipline presented is paramount and boundaries with other disciplines are rigidly maintained. Students are encouraged to learn the science maintaining the status of this highly regarded and universally valued information.

Within the amended presentation of anatomy and physiology, the emphasis changed, and students were introduced to each session in a contextual fashion. With the starting point now being nursing practice, students were encouraged to approach the material presented as it related to what they were expected to do in the clinical area. This was achieved using a tangible connection to practice which came in the form of a nursing chart. This would be considered to be an example of an integrated curriculum (Bernstein, 1975), where different subjects have been combined with an overarching theme that promotes contextualization and understanding.

The roles and functions of the student nurse in the initial part of their program are primarily associated with the care and observation of the patient or client. The introduction of the theoretical material, using nurs-

ing charts to mediate theory and practice and to embed the new conceptual material within the students' consciousness therefore enabled a connection to the practice situation. In this way the individual is facilitated to structure the information relayed in order to make sense of the typical situations encountered during the first year of their program.

This mode of presentation facilitates the extension of knowledge once the student was in professional practice. Von Glasersfeld (1989) considers viable knowledge to be the knowledge used to guide our practice and purports that it is extended when there fails to be a good fit between conceptual structures and the reality of a situation. When this happens, the individual has to extend and adjust their previous knowledge in order that equilibrium can be maintained and the said knowledge still be appropriate to allow the situation to be conceptualized. It was anticipated by the module team that if the students were informed with reference to the objectives of the charting of vital signs, fluid balance, nutritional intake etc. then this could be used as a basis for assimilating other related information at a later date.

The findings of the study suggest that extension of knowledge in the context of clinical practice is not atypical. Students, having appreciated that the theory assimilated in the classroom was not appropriate or sufficient for a particular situation, were noted to glean information from mentors and colleagues and from books and articles to increase their understanding and to allow the modification of viable knowledge to fit a unique client or instance. After the revision in the presentation of the taught material students had a strengthened cognitive framework to facilitate the understanding of their experiences and therefore knowledge extension is readily facilitated. To validate this assumption however, further data would need to be collected and analysed.

Lessons for the Future

A developing viable knowledge is demonstrated in practice in numerous ways. All those working in a healthcare context need to develop a viable knowledge of types in order that the patient or client can remain safe. Information must be assimilated and guide action. For ancillary workers

the body of that knowledge is only required to be small and functional whereas those with professional roles build their knowledge to be specific and appropriate to their particular role within the healthcare team.

In this context it can be seen the knowledge of a student nurse is a work in progress that is guided by the program being undertaken and by the structure and learning outcomes that govern the specific curriculum. Individuals enacting certain roles within the healthcare organisation may therefore appear to have a similar mission whilst each plays a different role. For the student nurse all actions are considered in the context of the curriculum. Each individual will use that which is taught to guide their learning. Although knowledge is individually constructed by each student and developed within the clinical culture experienced and the relationships fostered by the multi-disciplinary team, the prescribed objectives and learning outcomes of the curriculum are uniform for all.

Viable knowledge is demonstrated within the clinical area in a number of ways that range from simple to sophisticated. For example, the new student may exhibit signs of having engaged with the program material through the efforts that they show to display suitable behaviours. Approaching a patient or client and connecting with them in appropriate conversation is a learned activity and must have a viable knowledge to underpin it. The observer may argue that such behaviour, for some, is intuitive and individuals may have a natural aptitude, but ultimately this is a learned activity.

A progression from this is the ability to understand instructions and respond appropriately, to participate using clinical discourse or to be able to evaluate a (maybe very simple) situation and make a clinical decision. All these examples show the application of viable knowledge and are an important part of the student nurses trajectory. Learning is a situated activity and has as its defining characteristic legitimate peripheral participation (Lave & Wenger, 1991), which is concerned with newcomers becoming an integral part of a community of practice, with the meaning of learning configured through the process of becoming a full participant in a specific socio-cultural context.

Looking at the progression of a particular student is helpful in identifying how such viable knowledge is developed and exhibited in the early part of the program. Looking at study participant Anna, in the beginning

she was relatively reticent and her involvement, in the first couple of days was to watch the actions of others. As the placement progressed she became more involved in nursing care showing evidence that she was using the knowledge acquired in the classroom and developed over the course of the placement to guide what she did. The acquisition of appropriate language was evident from the beginning and the foundations for that were again acquired in the classroom and later cemented as the result of authentic experience in the clinical area. As time progressed there was evidence that concepts were manipulated and ethics and values reflected upon as a nursing perspective began to be appreciated. This progression is evidenced within the journal data and subsequent analysis. This summary is offered here as an illustration of the role of practice for the students within this study.

The study confirmed that students do use the material presented in the classroom to underpin their initial practice. The material imparted in this early phase of the student journey is used principally to allow the students to change their frame of reference from that of member of the general public to that of healthcare worker or more specifically to that of nurse, and also to facilitate a discourse of practice. Without this early clinical placement students would not have the same opportunity to focus their learning and early development of viable knowledge could not be constructed to underpin the rest of their studies.

The interpretation of the findings would appear to suggest that students require experiences that are relevant to the theoretical material that has been presented in the classroom and time and facilitation to allow them to grow that information into a body of viable knowledge. Although the study presented was limited as it only looks at the first year, there is no reason to believe that the development of viable knowledge does not continue in a similar manner throughout the program, and hence the match between the theoretical component of the course and the practical placements must be appropriate throughout. It is therefore the quality, and not the quantity, of the clinical experience that may be of paramount importance.

This research demonstrated that the value of an early practice experience as advocated by both ANMAC (2012) and the NMC (2010) is the opportunity to link the theoretical component of the programme with the practice of nursing enabling the individual student to make a firm

link between the two. If the curriculum is truly evidence based then all knowledge should be related to clinical practice and be viable. Viable knowledge in this way is seen as specific to the profession of nursing and presented in the undergraduate curriculum validates the decision for all nursing courses to be delivered at undergraduate level.

Equally a pedagogy and curriculum that emphasises the development of viable knowledge would strengthen the image of nursing moving away from recent criticisms that dominate the literature and question the work readiness of nursing graduates, their capacity to care, ability to clinically reason, and their skill proficiency (Darbyshire & McKenna, 2013; DeBourgh, 2012; Wolff, Pesut, & Regan, 2010). This might help shift perceptions toward one on a par with medicine which has a culture of educating practitioners within a clinical as well as educational context as

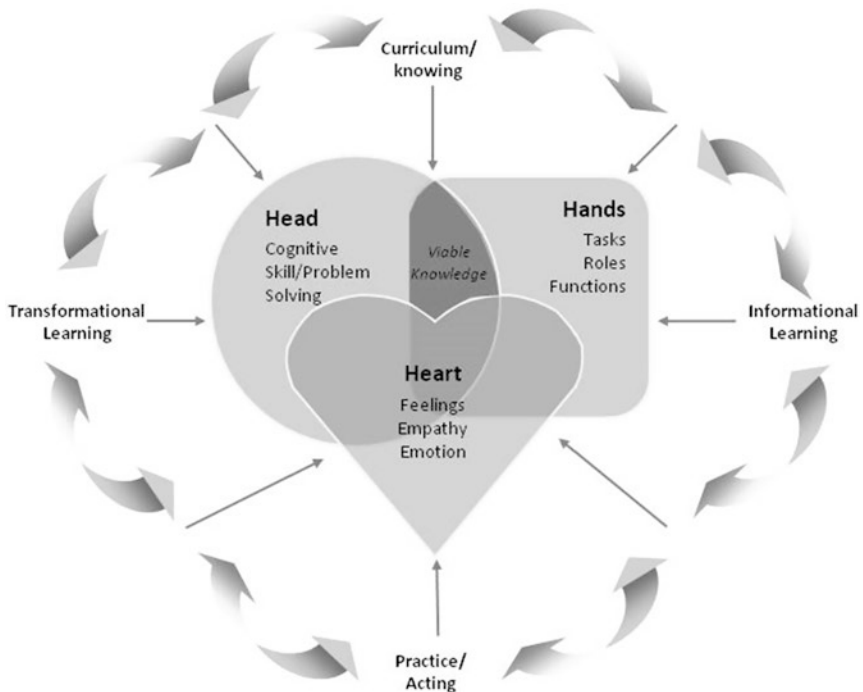


Fig. 7.3 The final model illustrating viable knowledge as central to the curriculum

opposed to trades like hairdressing and plumbing where training is done on the job and related theory is seen as secondary.

The model introduced earlier can be extended further and used to guide the delivery of the nursing curriculum. A simplistic explanation is offered here, although the reader is invited to engage with the comprehensive discussion presented in the study cited (Karstadt, 2010). Viable knowledge remains central to the model, which acknowledges the Hands and the Head of the student in the context of the paradigms of nursing introduced (Karstadt, 2008). In addition, this final iteration adds a Heart in recognition of the important role of compassion in modern day nursing practice (Fig. 7.3).

The arrows in the diagram represent a number of dualities that influence the delivery of the curriculum. These range from transformational and informational learning and theoretical and practical ways of know-



Fig. 7.4 Adding the dimension of duality to the model

ing. Each duality has a pair of descriptors which tend to be referred to in an either—or sort of way. However, they are not mutually exclusive and on occasion can co-exist and need to do so if the curriculum is to be fit for purpose. Figure 7.4 outlines the full complement of dualities against which a nursing curriculum can be usefully evaluated.

In summary, the most important part of the preparation of the nurse is to build a viable knowledge and thus ensuring that nursing remains a practice based profession rather than an administrative act. In such a scenario a viable knowledge that ensures the centrality of practice should become the defining attribute of tomorrow's nurse.

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8

Designing for Collaboration: A Simulation-Based Interprofessional Team Training Session for Medical and Nursing Students in Norway

Ingunn Aase and Karina Aase

Introduction

This study approaches interprofessional team training, a case study from the Norwegian educational setting for medical and nursing students to exemplify design issues of relevance. Current study programs have been investigated along with students' and professionals' perspectives and training needs, and a simulation-based IPT training session has been implemented. Few studies have explored students', faculty members', and clinical practitioners' conceptualization of interprofessional teamwork prior to implementation of training measures. Additionally, previous studies have not addressed such conceptualizations across stakeholder groups. Against this backdrop, the purpose of this chapter is to explain stakeholders' perceptions, experiences and recommendations of importance for interprofessional teamwork training in healthcare education,

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with the intention of improving the knowledge base for planning, designing and implementing such training.

The World Health Organization (WHO, 2010, 2011) has highlighted interprofessional teamwork as a core component in the recommended skill-set of health care workers, a view that resonates with research findings (e.g. IOM, 2015; Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013). The WHO (2011) *Patient Safety Curriculum Guide—Multiprofessional Edition* recommends educational programs to equip health care students with the skills and competence to become effective team players. This requires curricula addressing interprofessional teamwork in health care, including issues like how teams may improve patient care, how teams form and become effective, team leadership, and communication techniques. The WHO (2010) *Framework for Action on Interprofessional Education and Collaborative practice*, also calls for strengthening the interprofessional teamwork in educational programs.

In Norway, the authorities have highlighted interprofessional teamwork mandating interprofessional collaboration in healthcare by law: “*if the patient’s need call for it, the professional conduct shall take place based on collaboration and interaction with other professionals*” (Health Personnel Act, 1999, p. 4). In 2011, a White Paper report (Meld.St. 13, 2012) was issued regarding the future of health and social care educations. The report explicitly requires students to learn across educational programs, necessitating professionals and faculty staff to collaborate to ensure educational quality. It also states that interprofessional collaborative learning should be integrated as part of clinical practice. Furthermore, interprofessional teamwork in education is emphasized by the Norwegian government in order to ensure quality and safety in healthcare. Collaboration across educational programs and professions is an important driver in preparing the students for the interprofessional collaboration that are currently part of clinical work (Meld.St. 10, 2012–2013). In sum, the political and legal framework in Norway therefore lends significant support to policies promoting IPT.

The case study described throughout the chapter is conducted in Norway, at one medical school, one nursing school at another university, and one hospital in which the students had their clinical training. The participants were nursing and medical students who became familiar

with interprofessional teamwork during their clinical training, university staff engaged in theoretical teaching, and clinicians involved in clinical training.

Interprofessional Teamwork

There is a vast literature devoted to teams and teamwork. This chapter focuses on interprofessional teamwork, a multifaceted concept that several authors (e.g. Baker et al., 2008; Barr Koppel, Reeves, Hammick, & Freeth, 2005; Reeves, Lewin, Espin, & Zwarenstein, 2010; Thistlethwaite, 2012) have examined. As a minimum, an interprofessional team is a team that engages multiple professionals with complementary competence to work interactively towards a common goal. Healthcare organizations value teamwork. The reasons for this are diverse, but a common feature seems to be better quality of patient care and reduction of adverse events (e.g. IOM, 2003; Jeffs et al., 2013; Manser, 2009; Reeves et al., 2013). Manser's (2009) literature review suggests that teamwork is of critical importance in ensuring patient safety, identifying several aspects of teamwork that appear important in that respect, including the quality of team collaboration, the shared mental models, coordination, communication, and leadership.

The emerging paradigm of interprofessionalism in health care has been entwined with a growing interest in interprofessional education. Referring to Freeth, Hammick, Reeves, Koppel and Barr (2005), Thistlethwaite (2012) suggested defining interprofessional education simply as "*Occasions when two or more professions learn from, with and about each other to improve collaboration and the quality of care*". It is important to point out that interprofessional education embraces theoretical and methodological issues as well as interprofessional clinical training, the latter being a crucial component of both medical and nursing education. Researchers argue that to prepare the students for future interprofessional work, they should preferably engage in some form of "interprofessional learning" (e.g. Ponzer, Hylin, & Kusoffsky, 2004; Reeves et al., 2009, 2013; Reeves, Zwarenstein, et al. 2010). This implies a "learning by doing" principle. Thistlethwaite (2012) contend, "*The rationale for*

interprofessional education is that learning together enhances future working together.”

Interprofessional Education Effectiveness and Learning Outcomes

The knowledge, skills, and abilities that students have attained as a result of their involvement in a particular set of educational experiences are denoted as their *learning outcomes*. In their review of interprofessional education learning outcomes, Thistlethwaite and Moran (2010) synthesized six categories that could be used as a basis for addressing learning outcomes: teamwork, roles/responsibilities, communication, learning/reflection, the patient, and ethics/attitudes. The categories are broad and need further debate and operationalizing.

Traditionally, the effectiveness of interprofessional education efforts have been evaluated using Kirkpatrick and Kirkpatrick's (2008) four-level model: (a) reaction (how much the students liked the training effort), (b) learning (skills learned), (c) behaviour (resulting change in behaviour), and (d) results (outcomes, changes in practice). Salas, Tannenbaum, Kraiger, and Smith-Jentsch (2012) argued that the evaluation of the training could serve numerous purposes, for example optimizing the training program and providing feedback to the trainees and/or facilitators. The organizers of training should start the evaluation by stating the purpose, in order to compile the data and perform the analysis needed by the stakeholders (Salas et al., 2012).

Institute of Medicine (IOM, 2015) has highlighted the need to move beyond examining the impact of interprofessional education on learners' (students') knowledge, skills and attitudes to a focus on the link between interprofessional education and performance in practice. Only recently have researchers begun to look at such issues as patient safety, patient and provider satisfaction, quality of care, health promotion, population health, and the cost of care. These effectiveness relationships are complex and might require reconsidering how, where and with whom interprofessional education takes place.

Designing Interprofessional Teamwork Training

The type of training measures needed to educate students for teamwork can be debated from pedagogical, economic and technical perspectives (Kraiger 2008; Reeves, Lewin, et al., 2010). At the most basic level, most researchers agree that students need to work in teams in order to learn the dynamics and mechanisms that operate in a team setting (Salas et al., 2012; Thistlethwaite, 2012; Wenger, 1998). In a comprehensive review, Salas et al. (2012) presented an analysis of training in organizations, and argued that training design is not as intuitive as it may seem, and that training should be regarded as a systematic process guided by scientific research. In order to harness the potential of systematic training, the authors furthermore offer a range of tools supplied by learning theory and research on training. The framework addresses the time *before, during and after the training* as useful phases in planning and design of interprofessional teamwork training. This permits analysis of preparation, training execution and strategies for retention.

A critical issue to consider *before training* is the learning climate. According to Salas et al. (2012), communication should centre on the benefits of training, balance mandatory and optimal training requirements, involve the mentors early, and reduce skills erosion by scheduling the training shortly before the students will be practicing what they have learned. Use of technology should be justified, and training costs should be monitored and modelled.

During training, focus should shift to the individual characteristic of the trainees, such as self-efficacy, goal orientation and motivation to learn. Training strategies on information (i.e. concepts, facts, and information the participants need), demonstration (desired behaviour, attitudes), practice (opportunities to learn, objectives, appropriate stimulation), and feedback (actionable, task focused).

After training, the organizational context has an equal impact on the training effectiveness as the actual training session. After the students have completed training, supervisors should express positive attitudes towards the training, remove obstacles, and ensure opportunities for

students to apply what they have learned and receive feedback. Debriefing provide an opportunity to self-correct and to reinforce what is working.

Simulation-Based Training

Simulation seems to offer an effective way of learning teamwork; modern technology can be exploited to facilitate realistic training without exposing patients to risk (Dieckmann, 2009; Motola et al., 2013). Simulation-based training is believed to be effective across several industries and is increasingly exploited in health care education. Several studies have shed light on how and why simulation-based training works (e.g. Dieckmann, Molin Friis, Lippert, & Østergaard, 2012; Gjæraa, Møller, & Østergaard, 2014; Marshall & Flanagan, 2010). Well-designed simulation can enhance learning, improve performance, and minimize errors (Salas et al., 2012). Mduma et al. (2015) concluded that weekly, short and in-situ training led to a transfer of new knowledge and skills to clinical practice and a decrease in mortality.

Of the many aspects of simulation theory (Dieckmann, Gaba, & Rall, 2007; Jeffries, 2007; Stocker et al., 2014), two notions seem especially relevant: fidelity and “as if.” Fidelity, which can be psychological or social reflects how well the simulation emulates reality. Despite a widespread belief that a high fidelity and detailed simulation will optimize learning, the actual evidence is scarce (Cant & Cooper, 2017; Østergaard, Dieckmann, & Lippert, 2011; Warren et al., 2016). Still, it is safe to say that the level of fidelity anchors the simulation to the clinical training case and provide enough detail to generate questions and interactions. For example the study of Fung et al. (2015) showed promising results regarding simulation-based training for interprofessional teamwork in crisis resource management when compared to didactic case-based education or simulation without teaching. A cornerstone to simulation is the “as-if” concept, by which the participants should accept the simulated training case as if it were reality, both at a physical-mechanical and a psychological-emotional level. This idea—called “immersion” or “immersive simulation”—sets simulation apart from more passive and descriptive learning methods (Al-Ghareeb & Cooper, 2016; Paige & Morin,

2013; Sharma, Boet, Kitto, & Reeves, 2011). According to many authors, immersion is likely to lead to a deeper understanding of the simulated training scenario. Al-Ghareeb and Cooper (2016) highlighted that high-fidelity patient situations do not only test the students' skills, but also engage the students' emotions.

Corresponding to the team design of Salas et al. (2012)—i.e. the process notions of before, during, and after training—simulation-based training can be structured with phases such as planning, briefing, simulation-scenarios, and debriefing (Dieckmann, 2009; Sawyer et al., 2016). Planning of simulation-based training would involve a training need analysis and assessment of participants, training measures, case scenarios and fidelity. Briefing should include a demonstration of simulation-setting and training scenarios. The purpose of the debriefing is to encourage students to explore their own and others' practices (Flanagan, 2008). A new way to supplement the debrief is to focus on a detailed analysis of how good performance was produced (Dieckmann et al., 2017).

Stakeholder Perspectives

Focusing on the perspectives of students, teachers, supervisors and clinicians on interprofessional teamwork as a part of the education offered to nursing and medical students, should be considered vital in the design of such training. Stakeholder perspectives may constitute a knowledge base to develop a set of instrumental notions for optimizing the design of future training efforts.

In our study we employed focus group interviews, individual interviews, and observation of clinical practice to gather knowledge of stakeholder perspectives. We conducted both interprofessional and uniprofessional focus groups.

The findings revealed positive attitudes amongst stakeholders towards interprofessional teamwork training, but also concerns about how communication, collaboration and workflow, as well as professional role patterns should be treated in such training. The concerns were augmented by the power relationship between the nurses and the physicians, a

relation that was found to be manifestly asymmetric, reinforcing the dominant role of the physicians. The physicians' command of language and professional dialogue were found to deter the nurses from expressing their concerns (Aase, Hansen, Aase, & Reeves, 2015). Learning to use standardized communication tools, such as SBAR in the training, was recommended by both clinicians and supervisors. SBAR—Situation, Background, Assessment and Recommendation—is a communication tool constructed to function as a checklist and to structure the team's exchange of information (Haig, Sutton, & Whittington, 2006).

The students highlighted that the daily rounds and corresponding huddle meetings offered a suitable arena for interprofessional teamwork training where responsibility and professional roles were key notions.

The Interprofessional Teamwork Training Session—"The Patient Safety Day"

Based on the analysis of stakeholder perspectives (training need analysis) we designed an interprofessional teamwork training session for nursing and medical students called "The Patient Safety Day". The knowledge base from the stakeholder analysis indicated the following design elements: collaboration, interprofessional communication, speak-up, responsibility and role understanding (Aase, Hansen, & Aase, 2014; Aase et al., 2015; Aase, Bjørshol, Dieckmann, Aase, & Hansen, 2016). The learning outcomes were to communicate and work interprofessional, take responsibility and learn from each others competence.

Forty-eight students (26 medical students, 22 nursing students) participated in the training session. The nursing students were invited through a web-based student portal to participate voluntarily in the study as part of their clinical training. The medical students were invited through their supervisor at the hospital; the "Patient Safety Day" being included as an integral part of their clinical training. The students were assigned to eight groups, each group consisting of 5–7 medical and nursing students. The nursing and medical students were in their third and fourth year, respectively. Prior to the simulation, participants were

encouraged to read a booklet introducing them to the communication protocol SBAR and interprofessional teamwork. Each group trained on two simulation scenarios, Internal Bleeding (S1) and the Huddle (S2). A facilitator, either a physician or a nurse, supervised each group.

This study organized simulation with a level of fidelity and immersion attuned to the interprofessional teamwork training, involving both medical and nursing students.

Case context: The simulation-based training session for interprofessional communication was designed based on standard simulation principles using preparation, demonstration, briefing, simulation, and debriefing as the main phases. All student groups conducted both scenarios. Table 8.1 displays the key components of the training session, including pre- and post-simulation activities.

The booklet given to the students prior to the training session was developed by an interprofessional group consisting of a medical doctor, a nurse, and a researcher. An extended interprofessional group designed the training session, recruited the students, and conducted the SBAR demonstration. The facilitators were experienced clinicians in emergency medicine (S1) and surgical care (S2).

In the *S1* scenario, the internal bleeding, the clinical observation elaborated that a female patient who has just undergone laparoscopic surgery for removal of ovarian cysts, felt cold and complained about increasing pain (simulation briefing). Later, the patient—represented by a manikin (SimMan)—showed additional symptoms indicating internal bleeding and an increasing degree of hypovolemia (during simulation), after which the scenario should ensue with diagnosis and treatment. In the briefing prior to the simulation, in addition to informing the student groups about the patient conditions, equipment, and facilities, the student groups were encouraged to use SBAR.

The *S2* scenario, the huddle, emulated events occurring during the meeting arranged prior to the daily ward round. The facilitator acting as a “night nurse” briefly reported the status of three patients. The student groups were expected to plan the ward round, when shortly after, another nurse reported that the condition of one of the patients was deteriorating. Requested to use SBAR, the student group had to organize appropriate interventions.

Table 8.1 Key components of the simulation-based training session (Aase et al., 2016)

Training component	Timing	Contents	Purpose
Booklet to the students	One week prior to the training session	Introduction to SBAR and interprofessional teamwork	Introduce the students to the main purpose of the training session
Demonstration of SBAR	At the start of the training session (15 minutes) in plenary	Two facilitators—a nurse and a physician—role-play of a poorly conducted SBAR conversation followed by a best practice SBAR conversation	Raise the students' awareness of SBAR and how to conduct it, and develop a representation of the learning goals
Simulation briefing related to facilities and equipment for the two scenarios	20 minutes	To familiarize the student groups with the simulation setting	Ensure that students are familiar with the simulation setting and how to use the simulator as a technical device
Scenario briefing related to patient conditions and logistics for the two scenarios respectively	5 minutes	To familiarize the student groups with the scenarios and the SBAR tool	Ensure that students are familiar with the patient case(s) in the scenarios, and that they are aware of SBAR
Simulation, "Internal bleeding" (S1) or "Huddle" (S2)	15–20 minutes	A facilitator (physician in S1 and nurse in S2) supervised the interprofessional student groups through the simulation	To conduct the scenario according to best practice as laid out in preparation, demonstration, and briefing; and to create a common experience episode that can be debriefed later

(continued)

Table 8.1 (continued)

Training component	Timing	Contents	Purpose
Debrief related to interprofessional communication for S1 and S2 respectively	20–45 minutes	The facilitators steered the group conversations to capture learning points and consider improvements	To inspire the students to discuss and reflect upon interprofessional communication and the use of SBAR

During the simulation and ensuing debrief, the facilitators supervised the student groups in each scenario, mainly to ensure that the students covered the pre-defined learning outcomes related to interprofessional communication and SBAR. The 20- to 45-minute debrief sessions were designed to stimulate interprofessional reflection and discussion in a semi-formal setting. The facilitators could ask questions about challenges in conducting the scenario, using the SBAR, and student communication, and to ensure that all students participated in the discussion.

Aiming at investigating students' perspectives on interprofessional teamwork and especially interprofessional communication and the students' experiences with the introduction of the standardized communication tool SBAR, the case study analysed data obtained during and after the training. The main body of data was obtained from transcripts of debrief sessions. In addition, observations were carried out during the simulations.

The data identified two characteristics of the interprofessional communication taking place among nursing and medical students during the training session; *clinical exchange* (precise clinical information, measured parameters and test results), and *collaborative exchange* (team dialogue, cross-disciplinary knowledge, professional boundaries). Clinical exchange designated a communication style that aspires to be objective and to convey clinical information in technical language relying on terms with formalized definitions. The information contents emphasize measured parameters and unambiguous observations suited for medical treatment. *Collaborative exchange* captures less formal exchange, including dialogue

pertaining to team performance, cross-disciplinary questions, workflow adjustment and disagreements. The patient perspective seemed less manifest among the students during training.

The use of SBAR in the training session appeared to be closely linked to *clinical exchange*, and not so much to *collaborative exchange*. According to some students, this may have been due to insufficient training. The data suggest that efforts to improve the design and implementation of simulation-based training sessions should explore pathways to: (a) balancing clinical exchange and collaborative exchange, (b) considering the introduction of a communication style embracing patient-centred exchange, and (c) contextualizing standardized communication tools such as SBAR, by offering improved training and procedures that are grounded in the clinical scenario at hand.

Design for Future

Based on our case study, we suggest three themes—or perspectives—of interprofessional teamwork for students that should be considered when designing training efforts: clinical professionalism, team performance and patient-centred perspective.

Clinical professionalism embraces the technical knowledge and skills needed to repair a part of the patient's body, such as an organ. This perspective tends to be emphasized by the physicians and medical students, while the nurses and the nursing students acknowledge the priority of clinical professionalism, especially in conjunction with life-threatening emergencies. The perspective is seen as promoting an authoritative work and communication style, unimpressed by debates and democratic decision making, but founded on the superior clinical knowledge of physicians.

While clinical professionalism is seen as necessary and potentially life-saving, it should also be pointed out that this perspective is a poor starting point for resolving conflicts and disagreement, developing team identity, discussing non-technical issues, and adjusting the team's workflows and procedures. Such efforts require a broader dialogue and collaboration, conceptualized as *team performance*. Team performance

implies understanding the care and treatment provided to the patient, primarily as products of teamwork such as decision making, problem solving, team process and collaboration.

The *patient-centred perspective* is closely affiliated with some of the key care concepts, and involves understanding the patient from a subjective (first-person) point of view, and not purely through sociological, medical and statistical notions. Although the patient-centred perspective surface in different contexts, it was far from being a ubiquitous or dominant issue in our case study. The fact that the perspective is rarely mentioned is more striking than the occasional reference to the patient's perspective. From a theoretical point of view, however, there are compelling arguments that the patient's role and perspectives are necessary components of successful interprofessional teamwork and hence interprofessional teamwork training (e.g. Brewer & Stewart-Wynne, 2013; Coulter, 2011; Nelson, Tassone, & Hodge, 2014). A thorough understanding of the patient-centred perspective may require personal maturation for the students to experience identification with the patient at a sufficiently deep level allowing them to step into the *Lebenswelt* of the patient. The patient-centred perspective sets it aside from the two other perspectives, and the challenge with grasping it may have been difficult for the study participants to deal with during the case study and the simulation-based training session.

Our analysis suggests that in order to optimize future interprofessional training, the three perspectives should be highlighted and balanced contingent on the students' background and the learning objectives. The three-dimensional conceptual framework can be used to illustrate and discuss the use of SBAR. One may hypothesize that while SBAR might fit the instructional and precise communication needed for clinical professionalism, it might be too limited and inflexible to deal with team performance and the patient-centred perspective. The latter perspectives are linked to communication that involves less tangible aspects and non-technical processes. In a pragmatic sense, the three perspectives and their interplay constitute what can be termed a conceptual framework for interprofessional teamwork training. To illustrate, the perspectives can be arranged in the corners of a ternary diagram (Fig. 8.1).

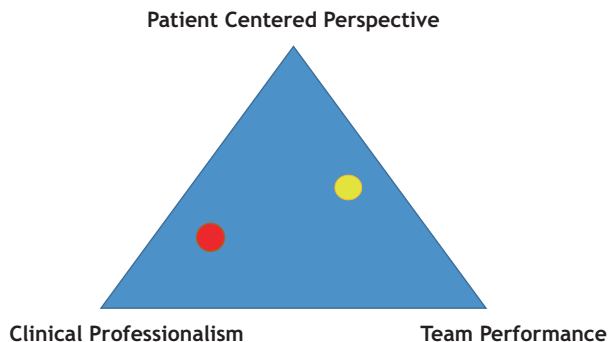


Fig. 8.1 A conceptual framework for interprofessional teamwork training

A point added to the diagram can be used to illustrate representative “values” (i.e. prioritization) of the three perspectives. The closer the point is located to a corner, the higher the “value” of the perspective associated with that corner. The corner point in itself represents a maximum “value” for the corresponding perspective while the two remaining perspectives have their minimum value at this point. The ternary diagram can serve as a tool for discussion, planning and design of interprofessional teamwork training, if a few assumptions are made. Let us assume that—in conjunction with an interprofessional teamwork training session—we consider the three perspectives as learning variables, and that it is possible to put more or less weight on each of the three variables. Let us also stipulate that there is a fixed amount of time and resources available, and that increasing the emphasis on one perspective, must be compensated by reducing the weight on one or both of the two other perspectives.

Consider, for example, designing an interprofessional teamwork session built around a scenario involving a complex surgical procedure. It is decided to put more emphasis on clinical professionalism at the cost of reducing the time spent on team performance and patient-centred perspective issues. Moreover, if assumed that the weight of the two other perspectives should be equally reduced in such a manner as to compensate for the increase in effort spent on clinical professionalism. The weight of the perspectives can then be shown by the red circle added to the ternary diagram in Fig. 8.1. Note, the proximity to the lower left corner,

the point where the weight on clinical professionalism is at a maximum.

As a second example, consider an interprofessional teamwork training design for a palliative ward. It is decided to allocate a great deal of the time to the patient-centred perspective. Moreover, one will put less weight on team performance, and only a minimum weight on clinical professionalism. This prioritization strategy can be illustrated by the yellow circle in Fig. 8.1.

The examples show that the ternary diagram can be used for planning and discussing interprofessional teamwork training in the design phase and in the debriefing that follows the training. In the design phase the weight on each perspective may be adjusted contingent on the students' background and according to the learning goals of the interprofessional teamwork training.

Key Learning Points

Interprofessional teamwork training is an important part of clinical training for nursing and medical students. A conceptual framework consisting of three dimensions: clinical professionalism, team performance and patient centred perspective may serve as a tool for planning, designing and assessing interprofessional teamwork training.

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9

Developing Curriculum: Nursing Students' Involvement in Skills Training Design

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Introduction¹

Policy initiatives and a growing literature within higher education call for students to become actively involved as co-designers, co-producers, and co-creators of their own learning strategies (Bovill & Bulley, 2011; Könings, Brand-Gruwel, & van Merriënboer, 2010). Despite the growing focus, student involvement is often limited to the use of representatives rather than actively taking part in development processes (McKeown & Carey, 2015). The goal of active user involvement is to place user needs

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at the centre of the design process (Bate & Robert, 2007) and thus view the user as a knowledgeable and critical partner in learning (Shor, 1992). While the idea of user involvement already is an established best practice within health care services (Fenton, 2014; Tremayne, Russell, & Allman, 2014), nursing and medical educations have only to some extent actually embraced student involvement. Student experiences have, however, been deemed valuable for future educational improvement (Papathanasiou, Tsaras, & Sarafis, 2013), and student involvement has been used in some curriculum design (Happell et al., 2014). There is also a comprehensive literature on student use, benefits, barriers, and their experiences with already developed training programs and devices (Button, Harrington, & Belan, 2014; Mancuso-Murphy, 2007; Raman, 2015). On the other hand, there is a shortage of descriptive studies that examine the role of the students as they are involved in designing their own learning activities (Kirschner, 2015). This chapter therefore sets out to describe two examples of how nursing and medical students are involved in different curriculum development aspects; a technological learning tool for clinical skills training in nursing, and an interprofessional training session for medical and nursing students.

Different Levels of User Involvement

While there are different forms of user involvement, it is not necessarily the form of involvement that is decisive for the outcome, but rather the extent of active involvement and how the power structure among participants is dealt with.

Arnstein's (1969) well-known ladder of citizen participation displays different steps of involvement according to the level of active participation. Bovill and Bulley (2011) have adapted Arnstein's ladder to revolve around student participation displaying how power is distributed between the teacher and the student (Fig. 9.1). The ladder entails eight steps ranging from 'tutors in control' (step 1) to 'students in control' (step 8).

Step one (*Dictated curriculum- no interaction*) and step two (*Participation claimed, tutor in control*) of the ladder indicate situations where the

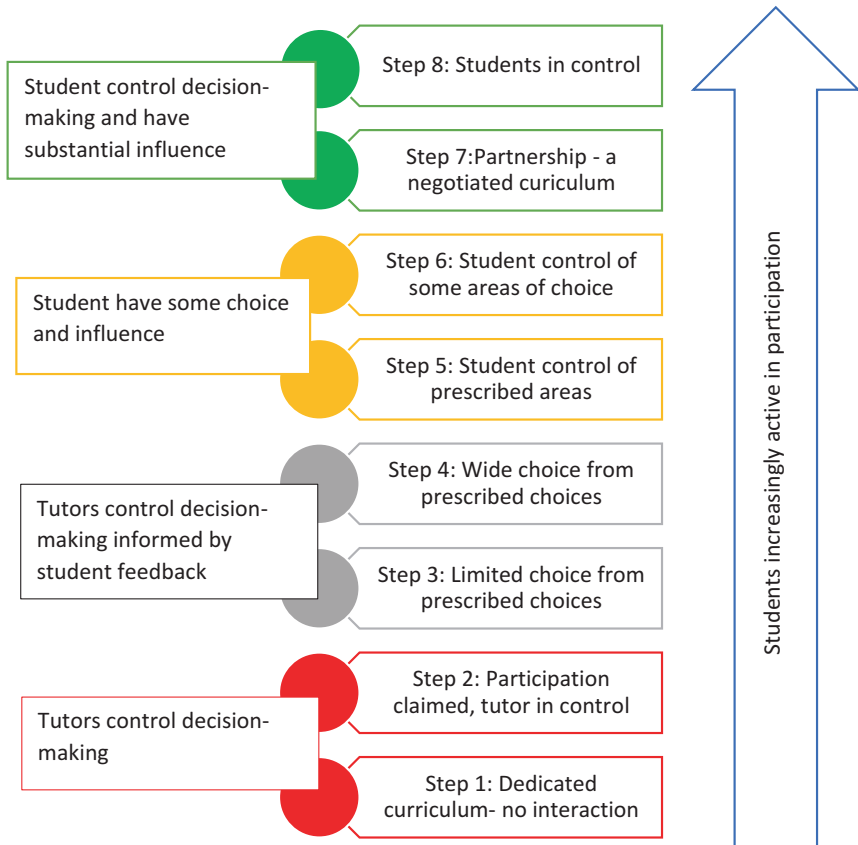


Fig. 9.1 Ladder of student participation in curriculum design (Based on Bovill & Bulley, 2011)

teacher controls all decision-making. Step three (*Limited choice from prescribed choices*) and step four (*Wide choice from prescribed choices*) indicate situations where the tutors controls the decision-making but are informed by student feedback. First in step five (*Student control of prescribed areas*) and step six (*Student control of some areas of choice*) students have the opportunity for real involvement and influence some of the choices made. Finally, in step seven (*Partnership—a negotiated curriculum*) and step eight (*Student in control*) students are in control of the decision-making and have substantial influence (Bovill & Bulley, 2011).

The highest level of involvement prevents the teacher from influencing the students.

There are different views of the optimal level of student involvement. While giving the students full control introduces a high level of autonomy, as supported by Deci and Ryan (2000), the absence of the tutor in decision-making processes is challenged in the higher education context due to quality assurance systems (Bovill & Bulley, 2011). Some would claim it to be directly irresponsible to leave the students in control as high quality teachers are still crucial for the facilitation of learning (Hattie, 2013) and in curriculum development (Kirschner, 2015).

The two examples of active student involvement provided below from the Norwegian health care education setting are both nested at the middle steps of the involvement ladder combining student feedback with shared decision-making. We believe that aiming towards combined student/tutor approaches would constitute an important first step towards more active student involvement in curriculum development within health educations. Moreover, the examples also provide grounds for ways of operationalizing active student involvement in the educational setting. Nevertheless, we claim that approaches need to be contextualized to the specific setting in which they are applied and therefore first provide an overview of the Norwegian nursing and medical education.

Norwegian Nursing and Medical Education

In Norway, there are 14 nursing schools and four medical faculties distributed across a geographically dispersed area. Furthermore, the Norwegian government has committed itself to implement a common qualification framework that makes academic programs standardized and comparable throughout Europe (European Ministers of Education, 1999). All educational institutions in Norway are required to establish and maintain a study program containing a plan for the sequence of courses leading to a degree. The study program also specifies learning outcomes comprising the skills and knowledge that students are expected

to acquire when completing the program. Most study programs have one or more study coordinators whose role is dedicated to the coordination and administration of the program.

Nursing Education

The institutions delivering the Norwegian Bachelor of nursing degree are subject to government control and must follow the centralized framework *National curriculum Regulations for Nursing Programs* when developing educational programs and curriculum (Norwegian Ministry of Education and Research, 2008). In Norway there are 14 different educational institutions that offer the bachelor's degree in nursing 180 European Credit Transfer and accumulation System (ECTS) resulting in authorization to become a Registered Nurse (RN). The educational program combines theoretical teaching, practical placements, and simulated skills training in clinical skills laboratories (Norwegian Ministry of Education and Research, 2008, p. 10).

The skill training is most commonly performed at nursing faculties' own clinical skills laboratories (CSL) (Wellard & Heggen, 2010). The CSL is often located within the nursing faculties' premises, designed to mimic a hospital ward and built for the purpose of actively simulating clinical nursing activities in a clinical setting (Jeffries, Rew, & Cramer, 2002). The CSL gives room for both supervised and unsupervised training sessions (Wellard, Solvoll, & Heggen, 2009). Training prior to practical placements in such facilities provides a safe environment and is believed to be an important component in pre-registration clinical skill development (Freeth & Fry, 2005; Hilton & Pollard, 2004). The students rehearse skills at different levels from technical skills concerning procedures performance to non-technical skills in complex interprofessional team training scenarios. The focus of the scenarios is often predetermined, meaning that it is important to clarify the aim of each training session prior to commencing. Clinical skills training is usually organized through a combination of supervised and unsupervised training sessions. The supervised sessions are either organized as low-scale

simulation setting or as a high scale simulation setting which will be explained in the following.

Medical Education

Four universities in Norway offer medical education leading to the medical degree (360 ECTS). Unlike the nursing schools, the medical schools, managed independently by their parent universities, are not required to comply with a national curriculum. This lack of coordination is somewhat compensated for by recommendations issued by the Norwegian Medical Association. The medical education takes 6 years and leads to candidate of medicine (*cand.med.*)-degree which is equivalent to Doctor of Medicine. The program includes extensive clinical service that covers a wide range of patients; e.g. primary health care in municipalities, centralized specialist hospital departments, emergency medicine, and chronically ill patients. Traditionally *cand.med.* graduates would have to complete a 1.5 year internship to be granted legal authorization for practicing medicine, but because Norway is part of the European Free Trade Association (EFTA), all physicians that can practice medicine in any part of EU/EFTA must also be able to practice medicine in Norway. This has led the health authorities in Norway to give authorization upon graduating, so that Norwegian graduates would have the same rights as foreign graduates.

The skill training; both technical and non-technical, is most commonly at medical schools when students are in clinical practice, in the last four years of their education. The two first year of their education is mainly theoretical. However, in first-year the students have communication skills training which is increasingly emphasized in medical schools as an essential part of novice students' development of core clinical skills. Students learn that adequate and effective communication is fundamental to providing high-quality medical care. Medical students are told that such skills make history taking and problem solving more accurate, facilitate patients' involvement and establish supportive and collaborative partnerships between patients and health professionals.

Example 1: Interprofessional Team Training for Non-technical Skills

“Tutors Control Decision-Making Informed by Student Feedback”

The curriculum development under study aimed at creating an interprofessional training day to develop nursing and medical students' non-technical skills. The rationale behind the development process is research arguing that to prepare students for future interprofessional work, they must engage in some form of ‘interprofessional learning’ through their education (e.g. Ponzer et al., 2004; Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013; Thistlethwaite, 2012). The interprofessional training day employed full-scale simulation at the clinical skill laboratory where the students engaged in simulation scenarios with advanced simulation manikins acting as the patient. After the simulation sessions, the students debriefed with a tutor in order to reflect on learning outcomes.

Description of Involvement

The student involvement was emphasized in two phases of the curriculum development:

1. Before designing the interprofessional training day
2. During and after the interprofessional training activities

Before Designing the Interprofessional Training

The aim of the student involvement was to map and describe nursing and medical students' perceptions of interprofessional work, focusing on experiences and recommendations used as input for the interprofessional training day and any other future training efforts. Cognizant that students represent the “users” of clinical training, the development process

surmised that their perspectives constitute an important source of information.

The students were invited to participate in focus group interviews, all semi-formal in design, with the aim of creating a dialogue among them facilitating reflection, interaction, and new perspectives and ideas. Twenty-two students (10 nursing and 12 medical students) participated in four focus groups interviews (one nursing group, one medicine group, two mixed groups). An interview guide to be used by the moderators (one nursing school tutor, one hospital-based tutor) was compiled and pilot tested. The guide included different aspects such as students' perceptions of their professional roles in interprofessional teamwork, and arenas for interprofessional teamwork. Both student groups received clinical training at the same hospital, and already had some exposure to interprofessional teamwork either in an educational or professional setting.

The focus group interviews indicated two major themes that reverberated across the student groups when describing their experiences with interprofessional teamwork. The first, "responsibility in professional roles", emphasized the impact of professional role behaviour. The second, "use of interprofessional arenas", discussed how interprofessional arenas at different wards, organizations and occasions influenced the interprofessional work. The students' perceptions suggested that traditional patterns of professional roles prevailed in clinical work and training e.g. medical students inclined to individual behaviour, assuming responsibility, or nursing students perceiving themselves as coordinators with shared responsibility. Furthermore, medical and nursing students suffered from a lack of mutual knowledge of each others' competence and capabilities, and this "knowledge gap" impaired collaboration across disciplinary boundaries. Students perceived interprofessional work arenas (e.g. ward rounds, psychiatric wards) as highly variable, reaching from arenas characterized by mutual respect and collaborative processes, to arenas characterized by hierarchical structures, distrust and lack of communication, leading to marginalization of staff, particularly nurses who felt "invisible."

Asked to propose an arena that could serve as a model for future team training, the students pointed at the daily rounds or the "huddle"

taking place in most wards prior to the daily rounds. Both work practices constitute a day-to-day arena for interprofessional teamwork in which nurses and physicians collaborate and discuss patients' current status.

Based on the focus group interviews, the students' needs and experiences were incorporated in the curriculum development. Examples were the creation of an arena for collaboration and communication across nursing and medical students, the use of communication tools like SBAR (Situation, Background, Assessment, Recommendation) to decrease the knowledge gap between the two groups, and the use of the "huddle" as basis for scenario development.

During and After Interprofessional Training Activities

The aim of the student involvement during and after the training activities was to map and describe how interprofessional communication played out among nursing and medical students as well as their perceptions of it. This was mainly done in semi-structured debrief sessions

Forty-eight students (26 medical students, 22 nursing students) participated at the interprofessional training day. Nursing students participated voluntarily as part of their clinical training while the medical students had the training day as a compulsory integral part of their clinical training. The students were assigned to eight groups, each group consisting of 5–7 medical and nursing students. The nursing and medical students were in their third and fourth year, respectively. Prior to the simulation, participants were encouraged to read a booklet introducing them to interprofessional teamwork and the communication tool SBAR.

Each group trained on two simulation scenarios, a post-operative complication called 'internal bleeding' and the daily round consultation between nurses and physicians called 'the huddle'. A facilitator, either a physician or a nurse, supervised each group and conducted semi-structured debrief sessions according to learning outcomes related to interprofessional teamwork.

Based on observations of the student groups conducted by two tutors (the same tutors that conducted focus group interviews) and recording of the debrief sessions, interprofessional communication among nursing and medical students was characterized by *clinical exchange* (precise clinical information, measured parameters, test results etc.) and *collaborative exchange* (team dialogue, cross-disciplinary knowledge, professional boundaries). Clinical exchange designated a communication style that aspires to be “objective” and convey clinical information in a technical language relying on terms with formalized definitions. The information contents emphasize measured parameters and unambiguous observations suited for medical treatment. Collaborative exchange captured less formal exchange, including dialogue pertaining to team performance, cross-disciplinary questions, workflow adjustment and disagreements. Clinical exchange was more salient in the internal bleeding scenario while collaborative exchange was salient in the huddle scenario.

The use of the standardized communication tool SBAR in the training scenarios appeared to be closely linked to clinical exchange, and not so much to collaborative exchange. According to some students, this was due to insufficient training on use of SBAR. The students furthermore acknowledged the role of the interprofessional training day in closing the knowledge gap (i.e. lack of mutual insight into each others’ capabilities and competence) across nursing and medical students. The training day was seen as a mediator for building trust, easier delegation of tasks, and establishing team identity.

Student involvement in the above example contributed to the development of the curriculum development, as well as input during the training activity and evaluation after the training day. Still, the involvement level was characterized by student feedback while tutors were still in control of the decision-making. Improvement areas for the interprofessional training day were related to better balancing of clinical exchange and collaborative exchange, introducing more elements of patient-centered exchange, and contextualizing standardized communication tools to address the specificities of each simulation scenario. Power imbalance between nursing and medical students could be part of this picture but was not properly addressed in the current study.

Example 2: Technological Learning Tool for Clinical Skills Training

“Students Have Some Choice and Influence”

Clinical Skills Training Context

The clinical skills training at the nursing faculty under study is organized in a clinical skills course in which the students have nine three-hour supervised training sessions. Every session revolves around a case study concerning a predetermined set of skills. Throughout the course, and in preparation for each session, the students are encouraged to use all available didactic tools: multiple-choice tests, instructional videos, assigned reading and an internet-based discussion forum. Besides the scheduled sessions, the students can book the CSL for unsupervised training every day of the week. At the end of each course the students undergo a practical-oral exam where they are tested by two of the faculty tutors in any one of the pre-determined skill scenarios that they have practiced during the course.

The curriculum development under study aimed at creating scenarios to develop the students' clinical skills as determined in the clinical skills course. The development included the contents of a technology-based learning tool for the students to use during unsupervised simulated training sessions when training for the specific clinical procedure 'wound care and dressing'. The training session is a low scale simulation consisting of a three-step practice: the teacher demonstrates the procedure, the students practice the procedure through simulation activities, and the students and the teacher reflect over different aspects of the procedure after performance. The technological tool was a handheld portable tablet. The tablet has the possibility to be pre-programmed to instruct the students in the correct actions to be taken, give feedback on actions taken, and to link actions to responses. The student is thereby guided through a scenario, which could develop in multiple ways, as different actions might result in different outcomes. The development of the scenarios aimed at

helping the students receive feedback and guidance without the presence of a tutor.

Description of Involvement

In order to develop the technological tool contents, students were involved in different phases and activities using an iterative process (Fig. 9.2). The process entails five phases; initial, investigation, revision, exploratory test and finalization. Prior to involving the students actively in the development process, four prototype scenarios were developed by a tutor team to exemplify for the students how the features of the tablet could be used.

Initial Phase

In the initial phase all students enrolled in the clinical skills course, 165 in total, were informed of the ongoing development project in a compulsory class. All students were thereafter given a one-hour introductory lecture on how to operate the tablets, including the possibility of testing the device in groups. The prototype scenarios were also made available for use during two compulsory supervised training sessions, in addition to be available for use during unsupervised training sessions. The students could also borrow the tablets for additional training. Over a period of two months the tablets were borrowed 134 times for use during unsupervised training sessions. All 165 students were then invited to actively participate in the development project to further develop the clinical skills scenarios, of which 19 students agreed to participate. The study did

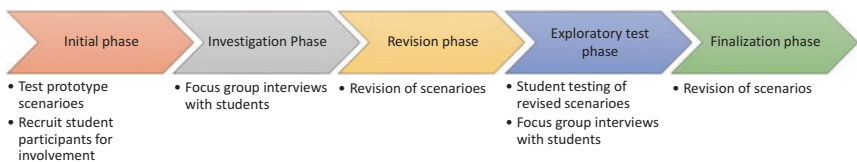


Fig. 9.2 Phases of student involvement

not entail any prerequisites concerning how much students had to use the device to be able to participate, as those without excessive experience could also contribute with important improvement inputs.

Investigation Phase

During the investigation phase the 19 students were divided in two groups (A and B) participating in two focus group interviews. The goal was to explore the students' learning needs during unsupervised training and how the contents of the technological learning tool could contribute to fulfilling their needs. The interviews covered issues such as experiences with CSL training, issues the students enjoyed or found difficult in the CSL environment, their needs, and how their training could be improved.

The students expressed a need for clearly stated expectations related to the knowledge required from them in each scenario. They valued feedback and confirmation that what they learned was correct, as well as standardized procedures related to the clinical skills scenarios. They say they wanted this because often they experienced discrepancies between how procedures were performed at their clinical rotations in practical placements and how they were taught at the nursing school.

Revision Phase

Based on the finding from the investigation phase several actions were taken by the tutor team in order to revise and improve the scenarios. A clinical nurse specialist from the hospital and the faculty tutors were involved to prevent discrepancies in procedures between the practical placements and the nursing school. The faculty tutors also contributed with clearly stated learning objectives including student expectations. A senior interaction designer was involved to make changes to the structure and the layout of the learning tool including standardized checklists as well as making the tool more interactive with multiple questions, answers, and feedback throughout and at the end of each scenario.

Exploratory Test Phase

In the exploratory test phase, 11 of the 19 students who participated in the investigation phase (five students from group A and six students from group B) volunteered to contribute in additional training sessions and focus group interviews to further develop the contents of the prototype scenarios. The training session lasted for 45–60 minutes in which the students received a revised version of the technological learning tool contents, based on the student needs and feedback gathered during the investigation phase. Students were given all the necessary equipment to complete the training session. The students were divided in groups of two or three and instructed to test the learning tool as it suited them, but with an instruction to complete the entire scenario. They were encouraged to take breaks in the scenario and discuss the process with each other, while taking notes of what they had experienced, felt and thought. Immediately after the practical training session, the groups were gathered for joint discussions in focus group interviews. The focus groups attended to different aspects of the learning material, in particular the layout, the contents, and areas in need of improvement together with suggestions for how they could be improved. In addition, the students handed in their personal notes from the practical test session for use as supplementary data in the development process.

Finalization Phase

During the finalization phase the students' joint contributions throughout the developmental process were analysed, resulting in the identification of five explicit learning needs which were all integrated in the revised clinical skills scenario. The five learning needs together with the practical implications for changes made to the learning tool contents is described in Fig. 9.3.

Why Student Involvement?

Although user involvement is deemed to be beneficial, there is ongoing debate concerning the extent of such involvement. Involvement of students in the developmental processes exemplified in this chapter was ini-

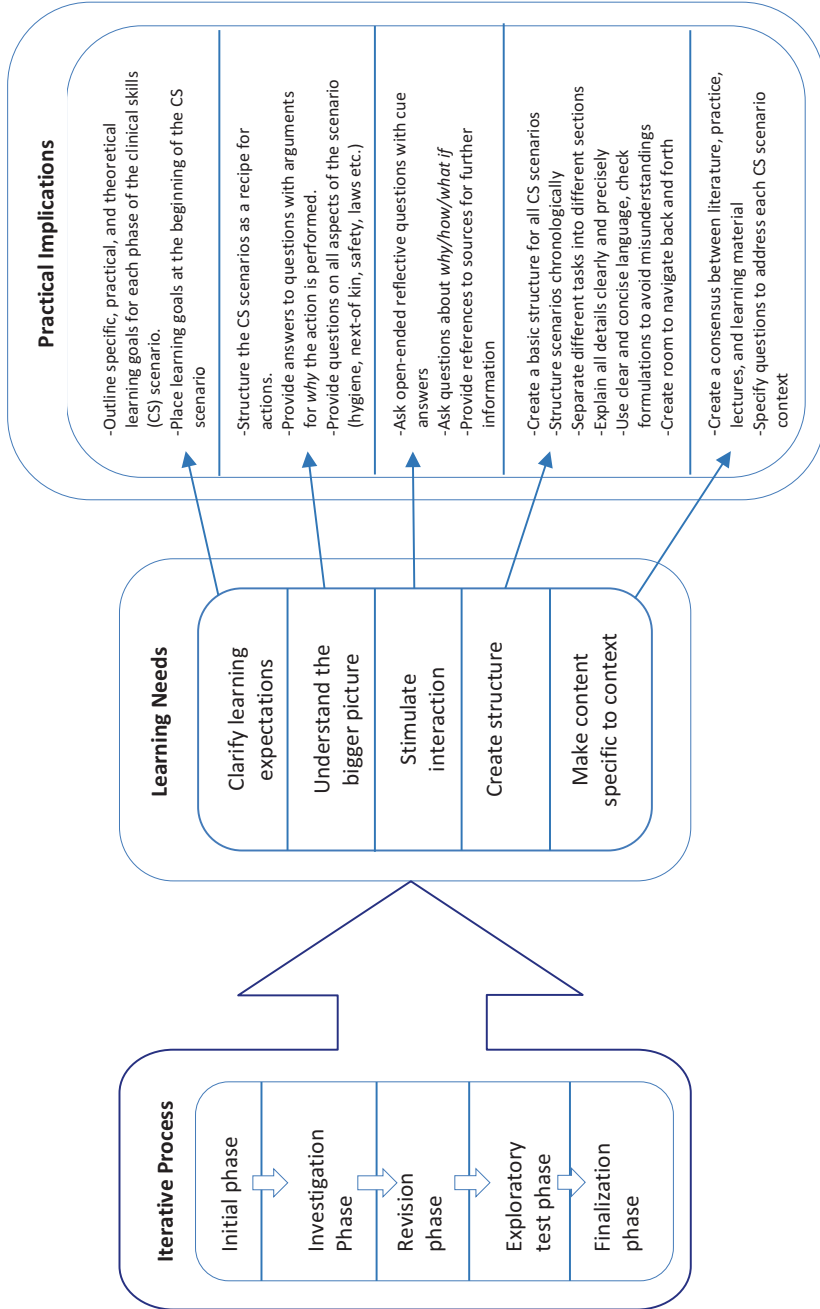


Fig. 9.3 From student involvement to practical implications

tiated based on the belief that students should be valued as an important asset for curriculum development within nursing and medicine. They have the potential to provide an alternative view on curriculum development. The students can more freely challenge existing educational perspectives, having no or little interest linked to established learning formats. Brooman, Darwent, and Pimor (2015) and Carey (2013) value students as important co-designers for higher education curricula for the reasons mentioned above. In addition, students constitute the main user group and if training curricula fail to resonate with them, the educational institutions should eventually reconsider the training format.

Based on our two examples, we claim that students can contribute with important descriptions of learning needs, which again makes it easier to tailor curriculum, learning tools, and scenarios to the students' needs. Our first example is placed in the lower end of the student participation ladder in Fig. 9.1 ("Tutors control decision-making informed by student feedback") while the second example is placed in the middle of the ladder ("Students have some choice and influence"). We claim that these steps are the most valuable as they both exploit the possibilities of combining valuable insights and contributions from both students and tutors. Shared involvement in the development processes is in our opinion more favourable than solely student- or tutor-based curriculum processes. Involvement of both parties in a democratized approach produces a stronger commitment, increases the decision-making power, meets learning needs, and increases creativity and engagement (Sanders & Stappers, 2008).

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10

Developing Lifelong Learning Skills: Using a Traffic Light Report to Promote Competency Standards and Self- Assessment Among Pharmacy Undergraduates

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and Natalie Brown

Rationale and Research Problem

Higher education for the professions must ensure the ‘fitness for purpose’ and ‘fitness of purpose’ of their graduates (Krause et al., 2014). Government and employer expectations require that graduates have developed necessary knowledge, skills and attributes rather than a knowledge base alone (Australian Government Department of Education and

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Training, 2015; Australian Qualifications Framework Council, 2013). For the health disciplines this requirement is compounded by the short expiry date on health content knowledge and the mandatory requirement that health professionals self-regulate their competence to practice. A “needs based” pharmacy education model (Anderson et al., 2012) emphasises alignment of student learning with their country’s practice requirements. In Australia this is communicated to the pharmacy profession and its educators through the National Competency Standards for Pharmacists in Australia (NCS) (National Competency Standards Framework for Pharmacists in Australia, 2010). In addition, there are desirable skills, such as self-assessment and informed judgment, that must be learnt and practiced as an undergraduate so that an individual pharmacist can maintain competence and engage in meaningful life-long learning. These skills are sustainable, utilised by an individual for their learning both now (university) and in the future (practice) (Boud & Soler, 2015).

The aim of the educational intervention (TLR) was to develop a form of sustainable assessment integrating two facets; (1) student knowledge, familiarity and acceptance of the relevance of their profession’s competency standards and (2) providing opportunities to practice and develop skills in self-assessment desirable for life-long learning.

Background

It is inherent in the definition of a profession that a code of ethics governs the activities of its members (Professions Australia, 2015). Such codes require behaviour and practice beyond the personal moral obligations of an individual. They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues. All health professionals registered under the Australian Health Practitioners Regulatory Agency (AHPRA) abide by the Health Practitioner Regulation National Law. Pharmacists comply with registration requirements and uphold their standards, codes and guidelines. Pharmacists must evidence their CPD in order to be registered to practice

(Pharmacy Board of Australia, 2016). Relevant to this chapter, the Code of Ethics for pharmacists in Australia states:

A pharmacist maintains a contemporary knowledge of pharmacy practice and ensures health and competence to practise. A pharmacist will recognise the importance of life-long learning and self-development and their impact on professional competence. (Pharmaceutical Society of Australia, 2014)

As is the case for all health professionals, the re-registration of individual pharmacists is centred on their ability to prove their competence to practice. Competence is defined as demonstrating the full repertoire of (relevant) competencies (Brown, Gilbert, Bruno, & Cooper, 2012). In conjunction with the Code of Ethics, the NCS outlines the competencies required of pharmacists to consistently observe and exercise accountability for the standard of healthcare they deliver to the public. The profession describes these competencies (NCS) as:

the skills, attitudes and other attributes (values and beliefs) attained by an individual based on knowledge (gained through study at university) and experience (subsequent practice) which together are considered sufficient to enable the individual to practice as a pharmacist. (National Competency Standards Framework for Pharmacists in Australia, 2010, p. 3)

Australian pharmacy graduates do not register upon graduation. Following successful completion of an accredited university course students complete a year-long internship under the supervision of a registered pharmacist. To succeed in their initial registration assessments, intern pharmacists self-assess their progress and identify their learning needs for “entry level” standard against the NCS. Following initial registration, pharmacists sign a statutory declaration on an annual basis at the time of re-registration and are expected to self-assess against their profession’s NCS; this activity is mandated and ‘*the need to ensure patient safety through assured professional competence needs little justification*’ (Coombes, Bates, Duggan, & Galbraith, 2011, p. 17).

Since the introduction of the concept of competence in the 1960s (Brownie, Bahnisch, & Thomas, 2011) competency standards (frameworks)

have played an increasingly significant role in the initial and ongoing registration of professionals. Whilst it is important to be cognisant of limitations to the use of competency standards in higher education (Huddle & Heudebert, 2007; Malone & Supri, 2012; Talbot, 2004) careful application can guide the education of professionals. The International Pharmaceutical Federation (FIP) promotes the use of the competency standards to *facilitate education, development and capacity to meet the needs to sustain a pharmacy workforce relevant to country-level needs.* (International Pharmaceutical Federation Pharmacy Education Taskforce, 2012). The NCS framework is utilised in Australia for regulation, education leading to initial registration, assessment of overseas trained practitioners, ongoing professional development of pharmacists, workplace assessment and communication of a minimum standard of practice (Australian Hospitals and Healthcare Association, 2014).

The pharmacy profession describes a competence continuum, whereby individuals consider learning and practice to be continuous, beginning with first year university studies through to advanced practice (Coombes et al., 2011). A pharmacist's high-level specialist knowledge and skills are maintained through an ongoing commitment to life-long learning evidenced as CPD. Pharmacists subscribe to a four step CPD framework (plan, act, reflect, evaluate) and the use of the NCS to inform CPD plans is mandated (Pharmacy Board of Australia, 2015). Pharmacy educators suggest CPD is moving towards

greater emphasis on self-direction, self-assessment of learning needs and goals, direct relevance of the learning to the practitioner's daily practice, and practice change. (Tran, Tofade, Thakkar, & Rouse, 2014, p. 4)

In the pharmacy context definitions of life-long learning (Watson, 2003), self-directed learning (Knowles, 1975) and CPD overlap. Each emphasises the responsibility of the individual and is critical to that individual's ongoing competence.

Sustainable assessment is an important precursor to life-long learning. Boud defines sustainable assessment as 'assessment that meets the needs of the present without compromising the ability of students to meet their own future learning needs' (Boud, 2000, p. 151). When focused on

life-long learning outcomes the Sustainable Assessment framework encompasses four conceptual features—being sustainable, developing informed judgment, constructing reflexive learners, and forming the becoming practitioner. Boud suggests that educators wishing to foster all four conceptual features need to consider eight key elements in their educational practice;

1. engaging students,
2. integrative activities,
3. authentic activities,
4. students' designing assessment,
5. learning and judgment,
6. modelling and practice,
7. working with peers,
8. giving and receiving feedback (Boud, 2010).

Central to most sustainable assessment strategies, self-assessment can be defined as '*a process of interpreting data about our own performance and comparing it with explicit or implicit standards*' (Epstein, Siegel, & Silberman, 2008, p. 11). Self-assessment can be grouped within Hattie's "visible learning" skills framework. Following his seminal meta-analyses in 2008, Hattie described visible learning as when

students become their own teachers and exhibit self-regulatory attributes that seem most desirable for learning (self-monitoring, self-evaluation, self-assessment, self-teaching). (Hattie, 2008, p. 22)

Acquisition of these self-regulatory attributes is essential to our future health professionals and the public. It should also be emphasised that metacognitive skills (awareness and understanding of one's own thought processes) such as self-assessment and self-reflection are intrinsic to learning (Boud, 1999). Andrade and Valtcheva (2009, p. 13) argue that '*students who set goals, make flexible plans to meet them, and monitor their progress tend to learn more and do better in school than students who do not*'. They explain that '*self-assessment is a core element of self-regulation because it involves awareness of the goals of a task and checking one's progress toward*

them.' As a result of self-assessment, both self-regulation and achievement can increase (Schunk, 2003). It has been recognised that self-assessment complements other teaching techniques to enhance students' knowledge, skills, attitude, and values, and forms the foundation for the development of an independent learner with the necessary life-long, self-directed skills (Hinett & Weeden, 2000; Motycka, Rose, Ried, & Brazeau, 2010). In fact, self-assessment at tertiary level is recognised as a critical pedagogical and assessment tool to support students in their transition to professional careers (Bourke, 2014; Ronfeldt & Grossman, 2008). Boud (1999) described self-assessment as a defining attribute of someone who is a professional and urges educators to include professional practice in addition to professional knowledge.

By definition pharmacists are expected to self-regulate their learning needs (knowledge, skills and attitudes) and uphold their practice through reflexivity. However, a profession's expectations are not always mirrored in practice.

Although the competency standards are embedded in every aspect of a pharmacist's professional life, most pharmacists remain relatively unaware of their influence or presence. (National Competency Standards Framework for Pharmacists in Australia, 2010, p. 7)

In 2013, an online survey of the Australian pharmacy profession revealed suboptimal knowledge and use of the NCS amongst pharmacists, particularly at critical times such as annual renewal of registration and for planning CPD (Nash, Chalmers, Stupans, & Brown, 2016). The profession also described a number of barriers to the use of the NCS including their practicality and relevance, the volume and format and poor awareness and understanding of the role of the NCS. Qualitative interviews with Australian pharmacy educators in 2014 revealed barriers to their use which were consistent with those raised by the profession in the survey. Educators also added that as the NCS are written for registered pharmacists, not students, they are hard to apply in the education context (Nash, Chalmers, Stupans, & Brown, 2015). The survey uncovered that 52.5% (96/183) of our nation's pharmacy students were not aware of the NCS

(Nash, Chalmers et al., 2016). An earlier survey (2012) at the trial site revealed that 65% (98/150) of the local pharmacy students knew of their profession's NCS.

The inspiration for the educational initiative (TLR) included the importance of the NCS to guide individuals and the profession to deliver acceptable standards of healthcare to the public and the profession's reported sub-optimal use of NCS, combined with poor student knowledge of the NCS both nationally and at the trial site (refer to Fig. 10.1). The design of the TLR was influenced by the findings in the surveys, the educator interviews and a review of the international pharmacy education literature.

The international literature revealed a number of approaches to embedding and utilising competency standards within pharmacy curriculum (Nash, Chalmers, Brown, Jackson, & Peterson, 2015). Pharmacy schools were focussed on course-wide evidence of their competency standards for accreditation and quality assurance including annual course level assessment (Mészáros et al., 2009; Szilagyi, 2008), portfolio evidence (McMahon & Henman, 2007; Petit, Foriers, & Rombaut, 2008) and curriculum mapping of competency standards or graduate outcomes (Plaza, Draugalis, Slack, Skrepnek, & Sauer, 2007). The mileMarker (Szilagyi, 2008) and Triple Jump Test (Mészáros et al., 2009) are examples of progress testing that subscribe to integration and multiple time

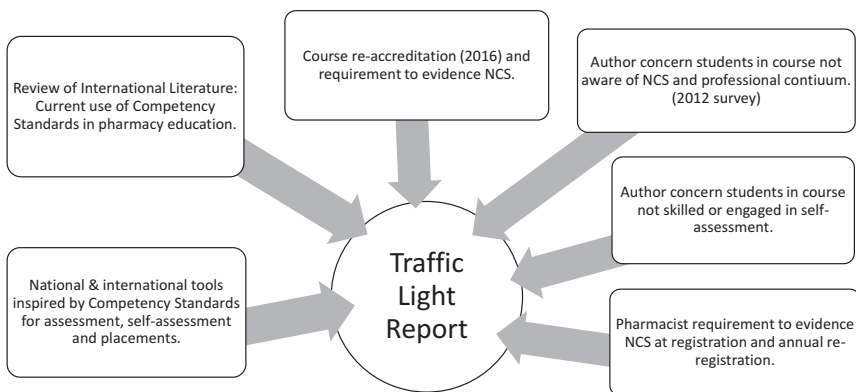


Fig. 10.1 Factors influencing TLR development

points of assessment. The Triple Jump Test is composed of three tests; closed book exam, open book exam and an observed structured clinical examination (OSCE) and is utilised to determine student readiness for experiential placements. Meanwhile, mileMarker participants receive annual progress reports based on annual comprehension assessment utilised to evaluate student learning and retention of knowledge course-wide. Plaza et al. (2007) employed topographical maps to summarise competency standard coverage in their curriculum, whilst McMahon and Henman encourage students to utilise a General Level Competence Framework as a checklist in student learning portfolios.

Increasingly, accreditation standards for higher education courses require courses evidence educational outcomes in the form of competencies, graduate/learning outcomes and/or graduate professional attributes (Australian Hospitals and Healthcare Association, 2015; French et al., 2014). Australian pharmacy courses also have professional accreditation to ensure graduates align with health workforce requirements and specify graduates must be aligned with the NCS (Australian Pharmacy Council, 2012).

In addition to those outlined above, a number of concurrent factors shown in Fig. 10.1 led to the TLR's development.

Background to the Traffic Light Report (TLR) Design

The TLR was designed to provide students with a form of sustainable assessment. Boud (2010) suggests there are eight key educational practices to support sustainable assessment, these were considered in the design of the TLR. As seen in Fig. 10.2 it was possible to integrate six of the eight practices in the one intervention.

How the TLR was designed to specifically address each of the six practices will now be explained. Self-assessment was intended to provide students with an opportunity to become more familiar with their profession's NCS, whilst also engaging them in their learning with specific consideration for where they were currently placed on their competence contin-

Sustainable Assessment Checklist	
<input checked="" type="checkbox"/>	Engaging students
<input checked="" type="checkbox"/>	Interactive activities
<input checked="" type="checkbox"/>	Authentic activities
<input checked="" type="checkbox"/>	Student's designing assessment
<input checked="" type="checkbox"/>	Learning and judgement
<input checked="" type="checkbox"/>	Modelling and practice
<input checked="" type="checkbox"/>	Working with peers
<input checked="" type="checkbox"/>	Giving and receiving feedback

Fig. 10.2 Sustainable Assessment checklist results for TLR (Boud, 2010)

uum. It was designed to encourage students to take the time to consider and integrate their learning course-wide. The TLR was an authentic form of assessment in that it drew on two facets of CPD specifically self-assessment and the NCS, both essential to a pharmacists' life-long learning. It was designed to encourage students to explore their learning and practice informed judgment, specifically comparing their self-assessment to an external reference point (provided by their educators) and calibrate their self-assessment based on their experiences the following semester. For those students that repeated the task, the TLR was intended to provide them with an opportunity to practice both self-assessment and informed judgment and learn through the modelling that was provided in their Semester 1 TLR results. Finally, it provided students with external feedback in the form of a course level summary of their progress on their individual competence continuum. This was based on their assessment performance in their previous semester. Employing self-assessment strategies alongside the external source of assessment provided students with an opportunity to compare the two. This approach has been described elsewhere in the literature as much richer than obtaining formative feedback alone (Sadler, 1989).

The TLR combined three elements to ensure the applicability of the NCS to students in their learning context; NCS, Miller's pyramid, and a

traffic light scale. The role and importance of the NCS has been discussed already; a background on the remaining two is now presented.

Miller's Pyramid

As described pharmacy graduates do not register at the point of graduation. The NCS are currently written at “entry-level” or the point of registration which provides an awkward gap for educators. In response to this and the barriers educators described, it was necessary to “scale” the NCS to ensure they were relevant to students in their context. Miller's pyramid provided students with a competence continuum. Whilst the literature describes newer clinical competence frameworks (ten Cate, Snell, & Carraccio, 2010) and other taxonomies (Biggs & Collis, 1982; Krathwohl, 2002), Miller's pyramid (Miller, 1990) provides a simple conceptual model of clinical competence. The base of Miller's pyramid represents knowledge components of competence; knows (basic facts) followed by knows how (applied knowledge), shows how (simulated performance), and then does (in practice setting) (Wass, Van der Vleuten, Shatzer, & Jones, 2001). Useful for the purpose of scaffolding learning it is possible to divide Miller's pyramid into the acquisition of knowledge (knows, knows how) and the application of knowledge (shows how, does) (Nash, Stupans, Chalmers, & Brown, 2016).

Traffic Light Scale

Whilst Miller's pyramid can communicate the level of performance on the “competence continuum”, the authors sought to provide an additional scale to enable students to self-assess their predicted grade on each NCS at their expected performance level. The traffic light scale (green, orange, red) has been utilised in project management (Hamilton, Byatt, & Hodgkinson, 2011) and for self and peer assessment with primary school aged children (Hodgson & Pyle, 2010). The traffic light is readily recognised and easily understood rendering it useful for student self-assessment.

Methodology

Creswell (2013) proposes four alternate knowledge claim positions for researchers (postpositivism, constructivism, advocacy/participatory and pragmatism). The authors were positioned within the pragmatist assumption paradigm; a problem centred, real world practice orientated inquiry approach (Creswell, 2013). Through the pragmatist position we could fully explore student awareness and acceptance of their profession's NCS and their learning responsibilities. The research applied a concurrent strategy of enquiry (Creswell, 2013) influenced by elements of Participatory Action Research (Creswell, 2013) and Educational Design Research (Van den Akker, Gravemeijer, McKenney, & Nieveen, 2006) philosophies. Fitting with the strategy of enquiry, mixed methods techniques (qualitative and quantitative) to collect and analyse the data were employed.

Method: Traffic Light Report Development

The TLR combined student and educator expectations of an assessed pharmacy curriculum and provided participants with an individualised student Traffic Light Report (TLR). As described in detail in *Background to the TLR design* Miller's pyramid was utilised to communicate a student's progress towards competence; corresponding to performance level. The traffic light scale provided a measure of proficiency and was populated by students' predicted grades alongside their educators' assessed grades.

The TLR were available to all B.Pharm students enrolled in Semester 1 and 2, 2014. Demographics are reported in Table 10.1. A 2012 survey provided baseline data for student knowledge and acceptance of the NCS.

The TLR was developed using a three-step process (Fig. 10.3);

1. Mapping assessments to the profession's NCS,
2. Student engagement through self-assessment, and provision of individualised student TLR for comparison and reflection, and

Table 10.1 Demographics of self-assessment respondents and survey participants

	Survey respondents (2012 cohort)	Self-assessment respondents (2014)		Survey respondents ^a (2014)	
		Semester 1	Semester 2	Semester 1	Semester 2
Respondents (n)	150	69	52	36	15
Gender					
Male	–	21	20	10	9
Female	–	48	32	26	6
Year					
1	33	0	1	0	2 ^b
2	33	28	12	21	4
3	62	21	23	6	4
4	22	20	16	9	5
Prior study	–	–	–	11	2
Age					
Average	–	–	–	21.92	22.93
Median (SD)	–	–	–	21 (2.96)	22 (3.45)

^aNumber who also recalled/reported completing self-assessment

^bOne student recalled completing the self-assessment but may not have submitted it or was ineligible for the TLR due to withdrawal

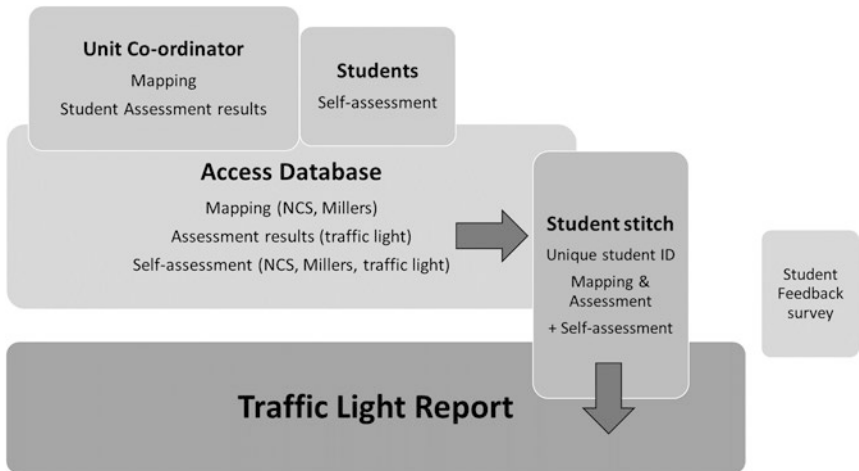


Fig. 10.3 Diagram of method

3. Evaluation, whereby students were invited to provide feedback on their experience. The researchers also explored patterns in the self-assessment data.

Step 1. Mapping Assessment to the Profession's NCS

Each assessment task across the four-year Bachelor of Pharmacy (B. Pharm) degree was mapped by the educators against the relevant NCS as well as Miller's pyramid. The following vignette provides an example of how this occurred:

Pharmacy Skills is a Semester 1, 1st year unit which consists of an assessment task entitled 'medication request'. In this assessment, the students were required to visit a local community pharmacy and request an over-the-counter product. The students were required to reflect on the encounter they experienced with the pharmacist or pharmacy assistant that dealt with their request in light of professional practice guidelines and the NCS framework. They were then required to provide a script or video of a "perfect" medication request scenario. The educators assessed this assessment task as addressing NCS; 2.1 'Communicates effectively', with 'Knows How' the corresponding proficiency level on Miller's pyramid. For the purposes of developing the TLR, this information was entered into a mapping database.

Step 2. Student Engagement

The authors consciously chose self-assessment as a technique to engage students in their own learning. At the beginning of each semester students were provided a brief explanation of the project. At the end of semester (conclusion of exams) students were invited via survey to consent and self-assess against each of the NCS (Fig. 10.4).

This was a voluntary, non-assessable task. Advice on how to optimise the self-assessment experience, background on Miller's pyramid, the NCS and the intent of the TLR to their current and future learning were provided in written and video format <http://www.screencast.com/t/4cQChMOeedp5>.

National Competency Standards for Pharmacists (2010)	Knows	Knows How	Shows How	Does	Green	Orange	Red
1.1 Practice legally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Practice to accepted standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Deliver 'patient-centred care'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4 Manage quality & safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5 Maintain and extend professional competence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 10.4 Excerpt from B.Pharm student self-assessment survey tool

Students were required to consider whether the NCS had been assessed in their previous semester, include an example of where it had been assessed (unit and assessment item), and decide on the performance level on Miller's pyramid that corresponded with their performance in their assessment. In addition, the students were asked to consider their proficiency against each NCS on a traffic light scale, where green corresponded with okay, orange corresponded with needs attention and red needs urgent attention. This information was provided in the student's individualised report to offer a comparison (self-reported point of reference) to that provided by their educators in the "assessed" column (Table 10.2).

Step 3. Student "Stitch"

Each student's assessment results (exam and individual assessments) were obtained from Unit Coordinators and imported into the customised Access mapping database. Student assessed grades were converted to the traffic light scale, where green corresponded to a high distinction (80–100%), distinction (70–79%) or credit (60–69%), orange a pass (50–59%) and red a fail (0–49%). The mapping outlined in Step 1 provided the corresponding NCS and the Miller's pyramid attributed to each assessment task. The database relied on one correct unique identifier (studentID) to extract and match relevant data. The student's performance in their individual assessments (traffic light—green, orange, red) were "stitched" with the assessment task mapping (corresponding NCS and

Table 10.2 An extract from a fourth year student's Traffic Light Report (TLR) displays "assessed" results alongside "self-assessed" result

National Competency Standards for Pharmacists (2010)	Assessed Millers	Assessed traffic light	Unit Example assessment	Self-assessed Millers	Self-assessed traffic light	Student's example
1.1 Practice legally	Does	Orange	CSA414 Written Exam	Does	Green	Dispensing practicals 1.1, 1.2, 1.3
1.2 Practice to accepted standards	Does	Orange	CSA457 Residential Management Review Report	Shows	Green	CSA457 workshops i.e. providing medical certificates 1.1, 1.2, 1.5
1.3 Deliver 'patient-centred care'	Does	Orange	CSA457 Professional Services Pitch	Does	Green	
1.4 Manage quality & safety	Shows How	Green	CSA406 Tutorial Assessment	Does	Green	

Units: CSA414—Clinical Pharmacokinetics 4, CSA457—Pharmacy Skills in Practice, CSA406—Therapeutics in Practice

Miller's pyramid level). An Access query selected one assessment task to display against each NCS in the report. The query determined in which assessment task the student had performed at the highest performance level on Miller's pyramid and the traffic light scale (e.g. Does, Orange). This provided the "assessed" column results for each participating student (Table 10.2).

The unique identifier (studentID) organised the "self-assessment" results alongside the "assessed" results (Table 10.2). The report was sent to each student following the release of their unit results. Students were encouraged to reflect on the report. They were requested to compare the "assessed column"—based on their actual results with that of their self-assessment. Students were asked to consider each NCS and identify standards that required their future attention and consider future learning activities that may assist them in their areas of weakness.

For analysis purposes an instance was defined. Each student had multiple assessments and each assessment may have been associated with multiple relevant NCS; these are referred to as "instances". For example, in Table 10.2, "1.1 Practice legally" lists 'Does' in the assessed column (this is one instance); the self-assessed column also lists 'Does' (this is the corresponding instance). This is considered a "match" or consistency between the educator and student viewpoint on Miller's pyramid. The Orange and Green result on "1.1 Practice legally" are also examples of individual instances. This result would be interpreted as inconsistency in the educator and students results, specifically the student self-rated higher when compared with their grades as assessed by their educators.

To measure the effect and acceptance of the intervention, multiple datasets were obtained and cross-referenced. This research was focused on the immediate effects on student learning. The authors were most interested in determining student knowledge of the profession's NCS, their experiences with the initiative and any resultant attitudinal and immediate educational outcomes. The data were obtained from individual student self-assessment data and academic results. Following the release of student reports, all enrolled students were invited to complete an anonymous feedback survey.

Multiple queries were utilised to extract the data from the customised access database. Whilst the TLR combined Miller's pyramid and the traf-

fic light scale, for the purpose of the student self-assessment and to present student results in the TLR the two components were separated for analysis. Consistency between student self-assessment and educator mapping/assessment was determined using SPSS version 22 software and the statistical program R, specifically non-parametric (chi-square and Fisher's exact) tests. The research was approved by the Social Sciences Human Research Ethics committee (Tasmania Network); H00013591.

Results

A small proportion of enrolled students completed the optional self-assessment activity; 42% (Semester 1, $n = 69/163$) and 26% (Semester 2, $n = 52/198$). Of those, fewer completed the feedback survey (Semester 1, $n = 36/72$; Semester 2, $n = 15/30$).

Student Engagement with the NCS

Although there was no statistically significant difference in the proportion of students self-reporting knowledge of the NCS from 2012 (pre-initiative) to 2014 (post-initiative), those enrolled in 2014 (post initiative) had greater agreement that the NCS were relevant to them now as students as seen in Table 10.3.

Student Self-Assessment Skills Practice and Development

Student self-assessment consistency with educators is reported in Table 10.4. When compared with Semester 1, the Semester 2 consistency in student and educator perspectives of performance level required of assessment (Miller's pyramid) increased by 10%, this increase was statistically significant <0.001 . When compared with Semester 1, the Semester 2 consistency in student grade prediction and educator assessed grades (traffic light scale) increased by 16%, this increase was statistically signifi-

Table 10.3 Student knowledge and perceived relevance of NCS

	Semester 2, 2012 (<i>n</i> = 150) Pre-initiative	Semester 1, 2014 (<i>n</i> = 72) Post-initiative	Semester 2, 2014 (<i>n</i> = 31) Post-initiative
Knew of CS	65% (Y = 98, N = 52)	Question omitted	84% (Y = 26, N = 5) ^a , <i>p</i> = 0.07
Relevant now	67% (Y = 101, N = 49)	84% (Y = 61, N = 12) ^a , <i>p</i> = 0.017*	84% (Y = 26, N = 5) ^a , <i>p</i> = 0.106
Relevant future	87% (Y = 130, N = 20)	93% (Y = 67, N = 5) ^a , <i>p</i> = 0.237	87% (Y = 27, N = 4) ^b , <i>p</i> = 1.0

N includes No, Unsure, No Answer. ^aChi-squared test, ^bFisher's test, *statistical significance (*p* < 0.05) comparisons with Semester 2, 2012

Pre-initiative: Semester 2, 2012, 150 of the 275 enrolled BPharm students completed a survey on NCS

Post initiative: Semester 1 and 2 2014 respectively saw 211 and 196 students invited to respond to the feedback survey. Students did not answer all questions within the surveys, represented by changes in the denominator

Table 10.4 Student self-assessment consistency with actual assessed results

	Consistent	Self-rated higher	Self-rated lower
Semester 1			
Millers	27.4% (233/850)	37.2% (231/850)	45.4% (386/850)
Traffic light	43.2% (367/850)	18.5% (157/850)	38.4% (326/850)
Semester 2			
Millers	37.7% (388/1028) ^a , <i>p</i> < 0.001	16.1% (474/1028)	46.1% (166/1028)
Traffic light	59.4% (611/1028) ^b , <i>p</i> < 0.001	8.2% (84/1028)	32.4% (333/1028)

^aMiller's pyramid: stat sig increase, Pearson Chi-squared = 22.49, *df* = 1, Asymp. Sig (2-sided) < 0.001

^bTraffic light scale: stat sig increase, Pearson Chi-squared = 49.28, *df* = 1, Asymp. Sig (2-sided) < 0.001

cant < 0.001. In addition, when contrasted with Semester 1, the Semester 2 students were less inclined to self-report their grades or performance levels higher than their educators (e.g. 18.5% down to 8.2% on the traffic light scale).

In Semester 1 and 2, respectively, only half (50% *n* = 18/36) and just over half (67% *n* = 10/15) of our participants reported they found the self-assessment survey user friendly. Students reported uncertainty at the time of self-assessment was due to;

- foreignness of Miller's pyramid and self-assessment,
- difficulties applying a dual scale (Miller's and Traffic Light),
- disconnect or poor understanding of underpinning knowledge to perform skills,
- difficulty with interpretation of NCS terminology,
- lack of confidence in own ability to perform tasks outlined by NCS and
- inability to recall and locate the assessments that had addressed the various NCS.

Over both semesters 92.5% ($n = 37/40$) of students compared their self-assessed results with their actual results and 64% (25/39) reported they would like access to the TLR again.

Eighty percent (32/40) reported that their participation in the TLR project would not change the way they would learn in the future. Student reported reasons included; already conducting similar self-directed checks, already aware of their requisite knowledge and skills for the profession or a lack of trust in the information contained in the TLR.

Student acceptance of the TLR was mixed, this is reflected in the student feedback comments;

I didn't see how it could help me as a uni student. (2nd Year Female 20)

Starting in first year would be great to see areas we need to improve in. (4th Year Female 23)

I will look back on it during my intern year to assess my own progress then using similar methods. (4th Year Female 22)

I would probably be more conscious of the competency standards during my learning. (2nd Year Male 19)

Students' suggestions to optimise the TLR included utilising self-assessment and the TLR during tutorials and placements, that is embedding them in learning activities; introducing it from first year and using it across both semesters; continuing to use it with cohorts once in their internship; and using a drop box system to enable download of the TLR to mobile devices

or providing a link to the TLR in the learning management system. To improve its useability students suggested a “not yet assessed” option, a comment box for every individual NCS rather than just at a domain level and providing students with more examples of assessments related to NCS.

A detailed discussion on Assurance of Learning (foundation laying, scaffolding and integration of curriculum) supported by the data from Miller’s pyramid is available elsewhere (Nash, Stupans et al., 2016). A discussion on grade prediction as a measure of self-assessment skills catalogued against the processes and dimensions of self-assessment (Sargeant et al., 2011) has been submitted for review.

Discussion

The TLR sought to provide opportunities to practice self-assessment skills and improve student familiarity with the NCS through practical application to ensure relevance of the activity to student learning now and in their future. The authors claim the TLR aligns with the definition of sustainable assessment (Boud & Falchikov, 2005; Boud & Soler, 2015), given it provides its students with opportunities to develop essential knowledge and skills for life-long learning.

Boud (2010) describes four conceptual features of sustainable assessment and suggests that educators can foster the achievement of each through the application of eight key educational practices. The TLR was designed with consideration of Boud’s eight key elements of educational practice (Fig. 10.2). The TLR findings are considered within each of the four conceptual features of sustainable assessment to determine how well the TLR aligns with the definition of sustainable assessment. The facets that were integrated to support the sustainable nature of the TLR were (1) student knowledge and acceptance of relevance of the NCS and (2) self-assessment skills development and practice opportunities.

1. *Being sustainable*

Whilst the findings suggest the TLR did not significantly improve student knowledge of the NCS, it did respond to university learning require-

ments and future learning needs (Boud & Soler, 2015) by providing students an opportunity to engage with the NCS and practice self-assessment (Fig. 10.4). The TLR was authentic in that it replicated aspects of CPD practice.

Student reported knowledge of the NCS did not increase significantly post TLR. Improved student acceptance of the relevance of NCS to them in the education context may be related to their combined use with Miller's pyramid, this acceptance may impact some student attitudes to learning and provide motivation for their learning now and in the future. The authors predict that practical application by participants may lead to long term benefits to the profession such as improvements in CPD and annual re-registration practices.

Although student and educator consistency were poor, there was significant improvement in self-assessment consistency from Semester 1 to 2 on both Miller's pyramid and the traffic light scale—that is, consistency improved with practice. The authors acknowledge the limitations to the use of grade prediction for determining self-assessment skills development, these are explored further elsewhere (Nash, 2016). Despite poor consistency and student self-reports that the TLR would not change their approach to learning in the future, the authors predict the self-assessment skills practice afforded by the TLR may translate to positive long-term effects for student learning and application in life-long learning. Whilst not appreciated by the majority of students currently, the intrinsic and subconscious use and development of self-assessment skills will become essential to their learning in the future. Inconsistency between our educators and students and the students experience are consistent with poor self-assessment or evaluation accuracy reported amongst students (Austin & Gregory, 2007; Dyke, Gidman, Wilson, & Becket, 2009) and registered pharmacists (Laaksonen, Bates, & Duggan, 2007; Pflieger, McHattie, Diack, McCaig, & Stewart, 2008). Pharmacists report they require instruction on self-assessment and have mixed feelings about it in their learning, practice and CPD activities (Laaksonen et al., 2007; Nash, Chalmers et al., 2016; Thompson, Nissen, & Hayward, 2013). This has implications for the initial and ongoing education of the profession and justifies the need for initiatives such as the TLR.

2. *Developing informed judgement*

Whilst often subconscious, pharmacists must observe appropriate judgement in their daily practice (e.g. medication requests, doses for children) as well as in their four stage CPD plan for life-long learning. For students of the professions the development of informed judgement is essential; uninformed judgement has severe consequences. Boud suggests

the development of judgement is a fundamental part of all courses, and opportunities for developing informed judgement need to be planned and staged throughout. (Boud, 2010, p. 256)

Although the TLR summarised student progress course-wide it did not offer multiple opportunities to scaffold the development of informed judgement itself. The TLR may benefit from greater student involvement regarding decisions on how and when they feel the TLR would support this development. Overall their survey suggestions point to an embedded use of the TLR; this may simultaneously ensure a staged approach to the development of informed judgement course-wide.

The TLR combined assessment and feedback from educators with self-assessment (Nguyen & Walker, 2014), however this could be improved with greater opportunities for peer discussion. Improvements could include follow up appointments with educators, peers or mentors to debrief the TLR and plan ongoing learning needs. As Merriam and Bierema (2013) highlight learning will be enhanced by sharing and inquiring with others to explore questions, insights, and reflections, in other words through giving and receiving feedback. This approach is essential for professional life given the NCS and Code of Ethics both state that pharmacists must pursue life-long professional learning and contribute to the development of others (National Competency Standards Framework for Pharmacists in Australia, 2010).

3. *Constructing reflective learners*

The essential relationship between life-long learning and self-assessment skills development is supported by pharmacy guidelines, practitioners

and educators internationally (Coombes et al., 2011; International Pharmaceutical Federation, 2009; Janke, Traynor, & Sorensen, 2011; Sharif, Gifford, Morris, & Barber, 2007). Students do not spontaneously self-assess (Schunk, 2003), thus Biggs (1996) and Chalmers and Fuller (1996) suggest we embed the learning and study skills (such as self-assessment) relevant to learning particular content in the teaching of that content. This was an important consideration in the design phase of the TLR.

For optimal self-assessment Sargeant et al. (2011) describe the need for an explicit standard. In the case of the TLR this explicit standard had three components; NCS, Miller's pyramid and traffic light scale. The consistency issues between students and educators and student feedback highlight the self-assessment task was too complex. Although removing the traffic light component would reduce the individuality of the information in the report, perhaps reporting against just the NCS and Miller's pyramid is detail enough. This is also more consistent with other approaches e.g. Plaza et al. (2007), who invited their students to rank domain coverage of the curriculum.

As shown in the student comments and feedback results most students compared the two columns in the TLR to establish their future learning needs. The TLR can provide opportunities for self-assessment and reflexivity and is supported by the finding that most students reported comparing the two columns in their TLR. However, it failed to do so in every aspect of the course (Boud, 2010). The TLR provided students with an opportunity to think about their learning and integrate their learning cumulatively course-wide (against the NCS). Students who repeated the task showed greater consistency with their educators potentially reflecting the calibration, modelling and practice they had undertaken. A major design flaw remains in that the TLR did not embed opportunities for reflective learners to practice and construct a reflective learning identity in every aspect of the curriculum (e.g. weekly tutorials). Nor did it seem to positively affect student's planned approaches to learning in the future.

As described by others (Deyo, Huynh, Rochester, Sturpe, & Kiser, 2011; Sharif et al., 2007) self-assessment skills must be developed early and be practiced multiple times across the course. This requires future consideration by the teaching team. The importance of sustainable assess-

ment fostered through self-assessment and NCS familiarity for life-long learning must be appreciated by students and supported by educators. The authors acknowledge the TLR is ineffective if it is “tacked on” to a course. It must be accompanied by a course-wide learning and teaching culture which encourages students to self-assess and be accountable and responsible for their own learning.

4. *Forming the becoming practitioner*

Competence is a complex construct (Miller, 1990; Van Der Vleuten & Schuwirth, 2005), as a result the assessment of competence is difficult. The TLR does not aim to describe a student as competent or not competent, rather it represents a student on their “competence continuum.” It was anticipated that through the eyes of the TLR students would gain familiarity with their profession’s NCS and become focussed on their individual learning needs whilst developing positive habits and skills to independently reflect on their continuum now and in the future. The competence continuum is important to assist the becoming practitioner to identify with their profession. The projection of a clear image of themselves in the future may also provide motivation for their current learning.

A professional must have an ability to calibrate judgement (Boud, 2010); for health professionals it is essential to safe healthcare delivery. The NCS document references the importance of professional judgement on multiple occasions. The TLR provided its participants an opportunity to calibrate their judgement. For those students who repeated the task in both semesters the increased consistency supports that this calibration occurred.

Self-assessment is key to becoming a practitioner. The importance of the self-assessment opportunities provided by the TLR is reinforced by self-assessment being key to CPD cycles (Eva & Regehr, 2008), self-assessment being intrinsic to learning (Boud, 1999), self-assessment having a critical role in supporting students in their transition to professional careers (Bourke, 2014; Ronfeldt & Grossman, 2008). Self-assessment is also a defining attribute of someone who is a professional (Boud, 1999). Through self-assessment and reflection, the TLR enabled our *‘students to*

make calibration of their judgments in comparison with the yardstick of others' (Boud, 2010, p. 257). The TLR and its yardstick enabled students to have their judgements of their learning tested alongside the judgements of others according to their profession's requirements communicated by the NCS (Boud, 2010). However, the TLR did not provide enough repeated application and practice over time and situations. Poor student and educator acceptance of educational initiatives has been described elsewhere (Szilagyi, 2008). Reassuringly over time and as their mile-Marker became routine its acceptance improved. Perhaps with repeated use, calibration and increased consistency in educator and student results the students may better appreciate the learning opportunities the TLR can provide. Self-assessment and informed judgment workshops with students may improve learning outcomes and foster transferable skills development.

NCS awareness and acceptance of relevance is essential to the becoming practitioner, given the importance of NCS to the profession, life-long learning and its central role in one's calibration of ongoing competence to practice. Ultimately, any practitioner on the competence continuum will need to engage with self-assessment in order to maintain and obtain new emergent competencies required in their scope of practice. The TLR is capable of assessment for learning; as an assessment task which encourages learning and self-assessment skills development and assessment of learning; through provision of a summary of course-wide assessment reflective of course-wide learning (Mumm, Karm, & Remmik, 2015).

Whilst over half of the respondents agreed the TLR was useful, not every participant was positive about their experience. The authors must consider whether the tool could be improved with student involvement in design and implementation phases, peer mentor activities and dedicated workshops. In educating our future professionals we must ensure they are given adequate practice to develop the necessary skills for life-long learning.

Limitations

Participating students may represent a more highly motivated group of individuals which potentially biased the results. There are many factors

which are difficult to control for in an education context, which may have influenced the findings. Other concurrent initiatives (learning contracts, introduction of NCS lectures or NCS flow charts in unit outlines, course accreditation activities) may have raised awareness of NCS. This study was designed to capture the immediate effects of the TLR; longer term effects that could further support the argument for classification as sustainable assessment could be captured in a subsequent longitudinal study.

Conclusions

The Traffic Light Report led to increased student acknowledgement of the relevance of the NCS and provided pharmacy students with an opportunity to practice self-assessment skills. Student acceptance of the TLR was mixed. The key lesson from the chapter is the requirement to make explicit the importance of sustainable assessment for higher education commencing from as early as first year. An institution is no longer a place of knowledge transfer alone, for that our graduates have the internet. Whilst the TLR has limitations, it is generally compliant with the four conceptual features of Boud's sustainable assessment framework. Other educators of the professions may consider using the educational practice checklist to review their existing assessments for sustainability. The TLR has potential portability to the higher education of all professions with defined learning outcomes or competency standards.

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11

The Work-Integrated Learning Program: Developing Employability Skills in Psychology Undergraduates

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Curriculum Design

The WIL curriculum (O'Shea, 2008) is viewed within the undergraduate psychology degree structure not as a 'bolt on' opportunity as can often be the case with WIL, but rather as the experiential backbone running through the degree. It is from this spine that all other learning and experiences extend for the psychology student at USQ Ipswich campus.

Development of Curriculum

A constructive alignment process was employed to ensure purposeful teaching and relevant student learning occurred. When developing the WIL curriculum, the USQ graduate capabilities most relevant to a WIL

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curriculum were examined. These capabilities then informed how the program and learning objectives were operationalised for the WIL curriculum. With regard to professional or industry relevant competencies, there was a desire to ensure that the nature of the student experience provided optimal opportunities for students to develop skills most relevant and desired by industry. Although there are no ‘accepted’ undergraduate professional/industry competencies in psychology studies in Australia (however there are Australian Psychological Accreditation Council [APAC] standards which all accredited psychology programs must adhere to and expected graduate attributes), there are common goals for undergraduate psychology at a national level (Cranney et al., 2011). These goals can be seen to align relatively closely to the Department of Education, Science, and Training’s (2002) employability skills, although they are somewhat more contextualised for a tertiary training environment rather than industry and may be seen to serve a different purpose as a consequence. To ensure desired industry competencies were being developed in participating students, a broad range of industry providers were canvassed and an agreed list of ‘industry-preferred skills and attributes’ was defined. This list consisted of two levels: Useful entry level skills for students commencing a placement and exit-level skills expected of students having completed a placement. The resulting list, while useful in identifying skills seen as important by potential employers, was seen as limited in applicability as employers/hosts did not put forward attributes beyond generic ‘work skills’. It was determined that what was sought were constructs that had a more developmental/psychological emphasis, which could be incorporated into a training program.

Structure of Curriculum

In identifying a suitable underpinning construct, the question was asked “if one wanted to enhance career-related skills and abilities, and perhaps even employability of a student in this course, what career development activities and related experiences would assist this, and what would inform their design?” Career adaptability was identified as a suitable construct to achieve this.

Career adaptability, in a global sense, is defined as “the readiness to cope with the predictable tasks of preparing for and participating in the work role with the unpredictable adjustments prompted by changes in work and working conditions” (Savickas, 1997, p. 254). More specifically, in behavioural terms, an individual acting with a sense of career adaptability will be looking at what opportunities are immediately present or likely to be present in the future with regard to all aspects of their career (exploration), considering what the future holds and adjusting their current behaviour in response to this (planning), and making rational, suitable choices (decision making) while developing a sense of capability through performing these career-related activities (confidence/self-efficacy; Creed, Fallon, & Hood, 2009; Hartung, Porfeli, & Vondracek, 2008). The WIL curriculum was therefore developed around these four components of career adaptability.

Career adaptability has been found to enhance employability in a range of contexts (Arthur, 1994; Ito & Brotheridge, 2005; London, 1993). There are several ways to define employability, with the term often being used in the context of job obtainment (Bridgstock, 2009). This chapter, however, uses the term employability in a much broader sense. For the purpose of this chapter the term employability refers to “a set of achievements—skills, understandings and personal attributes—that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (Yorke, 2005, p. 8). That is, employability is not being measured in the sense of students gaining and maintaining employment on graduation, rather as the development and transferral of characteristics (i.e., skills, understandings, and personal attributes) that contribute to the students’ capacity to gain and succeed in employment on graduation. It should also be noted that these characteristics and capacities developed during WIL related activities are not simply advantageous to students themselves, but also other stakeholders (Australian Collaborative Education Network Limited, 2015; Ferns, Russel, Smith, & Cretchley, 2014). For example, in Australia there is the need for more skilled and work ready graduates (Ferns et al., 2014). As students who undertake WIL programs have the opportunity to more fully develop skills associated with enhanced employability, WIL programs have the

potential to assist in addressing this need (Ferns et al., 2014). While a discussion of the extended benefits of a WIL program to stakeholders is beyond the scope of the current chapter, it is worthwhile noting the potential positive flow on effect from implementing WIL programs.

Using the four components of career adaptability (exploration, planning, decision making, and self-efficacy; Creed et al., 2009; Hartung et al., 2008) a range of career development and WIL activities were created to populate the scaffolded WIL curriculum. The content and delivery of these activities is discussed in detail in the examples below. Essentially, the examples presented in this chapter demonstrate how the WIL program assists students to develop their skill set, knowledge, understanding, and expectations, enabling them to work in psychology and psychology-related fields. It is proposed that developing such skills and attributes enhances both the employability of students and their understanding of their own employability.

Overview of the WIL Program

The WIL curriculum is embedded in the Psychological Skills program that students undertake during the first three years of their psychology degree. Generally, students complete two Psychological Skills subjects each year in the prescribed order (semester 1 through semester 6). Each Psychological Skills subject is comprised of a WIL component. In this chapter, these components are referred to as courses. The WIL courses that populate these subjects are displayed in Fig. 11.1. Each WIL course is mapped on the dimensions of perceived complexity (i.e., high and low) and environmental familiarity (i.e., familiar university controlled and unfamiliar professional controlled).

The curriculum (conceptualisation in Fig. 11.1) highlights how these courses relate to each other and contribute to the development of WIL-related student learning outcomes. The curriculum comprises four categories of activities (i.e., simple on-campus, complex on-campus, simple workplace based, and complex workplace-based). In the first half of the WIL curriculum (semesters 1 to 3) the activities tend to be simple practical on-campus activities, whereas in the second half of the WIL curriculum

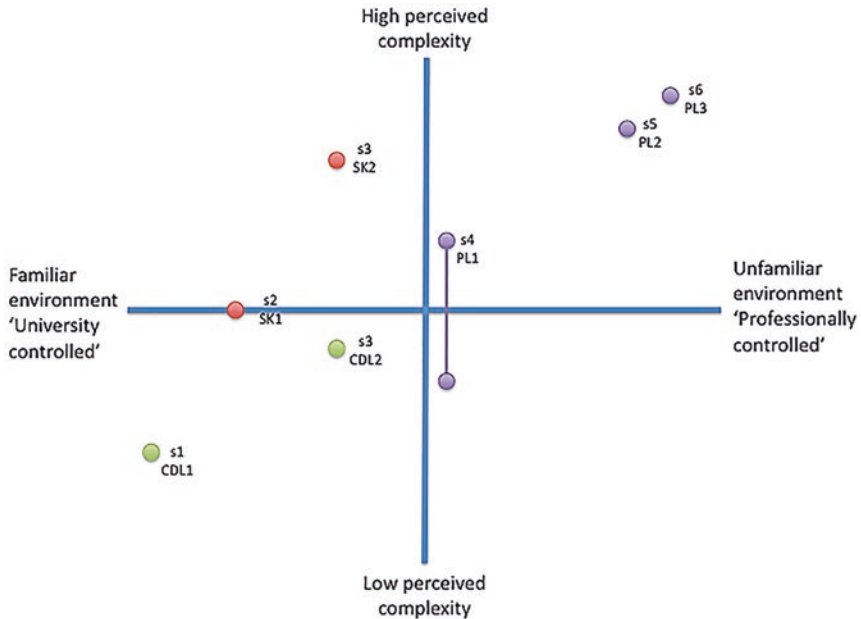


Fig. 11.1 The WIL curriculum. Note: 'University controlled' refers to an on-campus environment. 'Professionally controlled' refers to a workplace based environment. Low perceived complexity is synonymous to simple activities. High perceived complexity is synonymous to complex activities. S = semester; CDL = career development learning; SK = skill; PL = placement

the activities are more challenging and complex client-engaged off-campus experiences. It should, however, be noted that while specific activities are discussed under each of the categories, these activities should be considered as representative of a particular category rather than exclusively belonging to that category (O'Shea, 2014). Additionally, although the categories have been presented in the general order by which they are completed in the degree, activities within these categories often occur across multiple year levels. It is also worthwhile noting that activities in each of these categories may consist of both generic skills (i.e., they relate to enhancing general employability) and specific skills (i.e., related to the industry of psychology).

Within the first half of the WIL program (semesters 1 to 3), students complete courses with two different pedagogical goals. The first course

involves a series of group career coaching sessions. The goal of this course is to develop, to at least novice level, capabilities in the areas of career planning, self- and vocational exploration, and to start to promote a sense of vocational self-efficacy (mapped as CDL1). The pedagogical goal of the next two courses is to introduce realistic work skills previews at the core skills level. These courses introduce students to two core activities undertaken by psychologists and those working in psychology-related areas. These two core activities are assessment of client functioning/processing and the use of therapies and counselling to engage with clients (mapped as SK1 and SK2). A final course sees a return of group career coaching sessions in which students learn about and develop career transition skills (career planning skills and decision-making capabilities; mapped as CDL2).

The second half of the WIL program (semesters 4 to 6) involves more individually tailored and externally supported work-related experiences (mapped as PL1, PL2, and PL3). Pedagogical goals of these more complex activities promote higher level capabilities, awareness and knowledge in career planning, exploration, confidence, and decision making. Table 11.1 previews each category of WIL activities and the corresponding semester in which these are undertaken.

This chapter presents examples involving these different forms of WIL to demonstrate evidence of quality practice in teaching psychology. In addition, qualitative data is presented for each example to highlight the value placed on these activities by students who are either presently enrolled in the program or who have recently completed the program. The data was collected from two focus groups conducted at USQ in

Table 11.1 Categories of WIL activities and instances in the curriculum

Category of WIL activities	Instances in curriculum
1. Simple on-campus	Semester 1 CDL1 Semester 3 CDL2
2. Complex on-campus	Semester 2 SK1 Semester 3 SK2
3. Simple workplace-based	Semester 4 PL1
4. Complex workplace based	Semester 5 PL2 Semester 6 PL3

Note: CDL = career development learning; SK = skill; PL = placement

September 2014 as part of a larger study investigating the development of graduate employability (ethics approval number: H14REA105). The first focus group contained one participant and two interviewers. The primary interviewer was not involved in the Psychological Skills program at the USQ Ipswich campus. The second focus group contained three participants and one interviewer. The interviewer was involved in the Psychological Skills program at the USQ Ipswich campus, however, had not previously taught participants in the focus group.

Category 1: Simple on-campus WIL preparatory activities. The first Psychological Skills subject comprises activities that typically fall under simple on-campus WIL preparatory activities. Such activities are centred around raising self-awareness, understanding of occupational opportunities, promoting more realistic understanding of what it is to be a professional, and the behavioural conduct and responsibility associated with this (O’Shea, 2014). Additionally, during semester 3, students learn generic skills to strengthen their prospects of future employability in their preferred career or field of research in the discipline of psychology.

Example of simple on-campus preparatory activities. The WIL activities undertaken by psychology students in semester 1 are designed to expand their understanding and knowledge of the varied careers available after completing their psychology degree. The purpose of these activities is to assist students in understanding their prospective employment options on graduation and provide a sound knowledge base to make informed career decisions and set realistic career goals. Specifically, over a period of five weeks (with three hours of workshops each week), students complete a range of activities and modules to assist them in their understanding of what psychologists do in their various fields. Additionally, students undertake tasks designed to get them thinking about why they selected psychology as their career choice and what employment options they could pursue on graduation. A specific example of an activity a student encounters in these sessions is presented below.

During Louise’s first Psychological Skills course she is asked to complete several self-evaluations regarding her skills, knowledge, career preferences, and aspirations. Over several weeks Louise engages in activities which assist her to critically reflect on these evaluations and how they have changed over the course of

her life and also, as a result of learning more about what it is that psychologists do. Louise is given specific information regarding the various pathways for becoming a psychologist and the fields into which each pathway may lead.

While it could be assumed that students enrolling into a particular degree are aware of their career options on graduation, this may not necessarily be the case, particularly when there are several options available. For example, after completion of an accredited three-year sequence in psychology, a student may exit the program to pursue a non-practicing psychologist pathway (Australian Psychological Society [APS], 2015). Alternatively, students who wish to work as practicing psychologists need to complete an honours year allowing registration as a provisional psychologist (APAC, 2012). Additionally, students can pursue postgraduate pathways into fifth year general psychologist programs, specialist extended masters programs, and/or higher research programs (APAC, 2012; APS, 2015). Feedback obtained from the focus groups suggested that the content covered in semester 1 of the Psychological Skills program was beneficial in this regard. A student reported that "...I had... the stereotype of a psychologist with a nice office and regular clients... but until actually doing Psych[ological] Skills A... I didn't know the difference [between] researchers compared to clinical psych, compared to... consultants". This feedback suggests the career development component of the first Psychological Skills subject is valuable in assisting students to understand the employment options in psychology and thereby helping them to better plan, explore, and consider their options (Pool & Sewell, 2007).

Semester 3 activities include 'transition skills'; in particular, those skills which will assist students to transition from their current career stage (student) to the next stage of their professional career (graduate employment). Skills trained and tested include employer interview participation (individual and/or panel), developing cover letters, resumes, and detailed job applications (e.g., resume responses and selection criteria) and learning how to make an 'objective' career decision. Specifically, students complete three workshops for the duration of three hours each. This component of the course also prepares students for their subsequent semester 4 placement. In their semester 4 placement, students go through the process of formally applying for a position as a member of a project

team. As a result, the first workshop centres on applying for a job. In this workshop students are guided through the process of building a resume and writing cover letters. The focus of the second workshop is responding to selection criteria, analysing job advertisements, and exploring methods for making career decisions. In the final workshop, students' completed job applications are critiqued, and feedback is provided individually. Students then submit their applications to their prospective semester 4 placement supervisor. Students are shortlisted and undergo a formal interview process with their prospective supervisor. After this interview process, students are informed about the success of their application and unsuccessful students have the opportunity to apply for an alternative project. A specific example of a student applying for their semester 4 placement is presented below.

John has decided for his semester 4 placement, he will apply for a team project aimed at creating a behavioural assessment tool for adolescents. The project is being run by an external party from a local high school. During the career development workshops run in Psychological Skills C (semester 3), John updates his resume, making it relevant to the position. Additionally, he writes a cover letter to the leader of the project team and responds to the selection criteria. John receives feedback in the final career development workshop and updates his application accordingly. John is shortlisted for the position and interviews the following week. A short time later John receives the news that his application was successful.

Career preparation workshops offering transition-to-employment skills are extremely beneficial for students (Bridgstock, 2009). While such workshops may be offered as 'bolt-on' experiences by parties external to the degree (e.g., through student services), embedding such workshops in the curriculum has added value as it allows for provision of contextualised, horizontally and vertically integrated career learning within the curriculum. Data from the focus groups indicated that students enrolled in the Psychological Skills program believed the information they had been given in the job application workshops was helpful in terms of broadening their skill set. A student stated "... we got lots of tips on applying for jobs and how you should present yourself... we got a template for your

resume... and went through the STAR model on how you would address selection criteria. There was a...really good subject on the whole thing and we actually do up our CV". Additionally, activities such as preparing job applications assist students to successfully engage in career-related activities with increased levels of confidence and self-efficacy.

Category 2: Complex on-campus WIL simulated experiences. To perform effectively in a novel work situation, an individual must demonstrate skill mastery, familiarity with work content, and negotiate environmental influences (Eraut, 2006). Simulations allow for the control of one or more of these factors, depending on the experience of the learner. This degree of manipulation afforded by simulated learning makes it a valued tool within the scaffolded WIL curriculum.

As they increase in pedagogical complexity, simulations incorporate elements of both problem-orientated practices (e.g., scenario-based learning) and project learning (e.g., addressing needs related to work, research, or the community; O'Shea, 2014). The majority of the learning activities within the Psychological Skills program in the second and third semesters generally fall under complex on-campus WIL simulated experiences. Students are required to apply previously learnt theoretical knowledge to a professional context in order to resolve an industry (or work) related issue (O'Shea, 2014).

Example of complex on-campus simulated activities. In the semester 2 and 3 WIL based simulations, students are exposed to foundations of professional practice and introduced to approaches regarding both assessing and treating clients. In semester 2, students spend the semester with a fellow "therapist" (i.e., students each take on the role of being a therapist), learning each form of therapy (four forms of therapy commonly used by psychologists in practice), practising with each other and then submitting a portfolio of their practice as assessment.

Building on this, in semester 3, students are provided with the opportunity to administer mock psychological assessments in a realistic setting. Students undertake five sessions (three hours each) where they learn about a selection of commonly used clinical psychological assessments. Students also have a three-hour additional session to practice administering these tests to "clients" (e.g., psychology staff) and are assessed on their

ability to correctly administer one of the tests. A specific example is presented below.

Hayley is completing her third semester of Psychological Skills. For the past five weeks, Hayley has been learning about how to administer different psychological tests. She has examined how appropriate tests are selected, why it is important to administer such tests in a standardised way, and under what circumstances the standardised procedures may require a deviation. Hayley has been provided with multiple tests which she has been learning how to administer. The morning of the assessment, Hayley is informed that she will administer the Rey Auditory Verbal Learning Test (RVLT). Hayley spends the rest of the day practicing how to correctly administer the RVLT. Hayley is then assessed for her ability to correctly follow the test administration procedures. A staff member from the School takes on the role as a client and Hayley administers the test to her client, in the appropriate way.

The opportunity for students to learn how to administer an array of standardised tests in a simulated work environment is an activity that not only assists in specific skill development but is also an activity that students highly value. In addition, the activity enables students to make the connection between the implementation of tests with previously learnt skills and theories from their past Psychological Skills subjects. A student reported that “I learnt different treatments and I’ve learnt how to apply them [be]cause there’s a difference between [being] taught that and actually applying them”. Additionally, when the student was asked about how skills could be developed to assist with becoming a clinical psychologist, the student responded that “...the first and second [Psychological Skills] courses... teach you [skills relevant] to be a psychologist and... talk to patients... and then in second year they teach you how to assess someone, so you’re covering both bases”. It should be noted that after completing these skills subjects the student would not be ready or able to administer real psychological assessments to actual clients, however, the student is building skills and confidence which will be beneficial for future development in these areas. Additionally, the student has been exposed to practical aspects relevant to a future career in psychology.

Category 3: Simple workplace-based WIL preparatory activities.

These WIL activities are useful in preparing students for fully independent work placements. Activities may include exposing students to the industry, providing opportunities for observation and shadowing, and informational interviewing (O'Shea, 2014). The activities also involve project work.

As discussed previously (under simple on-campus preparatory activities), in semester 3 of the Psychological Skills program, students are required to formally apply and be interviewed for a position on a project team. Such teams are typically coached by an external party in a psychology related field or a staff member in the School of Psychology and Counselling. The goal of these experiences is twofold: The student should feel they have undertaken a work-based apprenticeship with a coach or workplace mentor (not a lecturer), and they should have achieved an acceptable outcome for their client/project.

Example of simple workplace-based preparatory activities. In semester 4 of the Psychological Skills program, students commence their first work-based placement. Prior to this, students undergo a competitive application and interview process to secure a position on a team project. Within each team, students work on a community/industry focused project for approximately 80 hours over the duration of one semester. A specific placement example is provided below.

Henry has been accepted into a project centred on resilience training for his first work-place based placement. Henry is one of four team members working on the project which is being run by a staff member in the School for an external client. The team arranges to meet once a week for three hours, over the duration of 13 weeks. Ultimately, the team is working towards presenting a resilience workshop for at risk adolescents and young adults. In addition to the team meetings each week, Henry will also need to complete approximately three hours of work each week for the project. This additional work encompasses activities such as research, skills training, and materials preparation as he works towards the end goal of assisting in the presentation of a resilience workshop. After 13 weeks on the project, Henry and his team present their workshop at a local community centre.

Introducing students to simple workplace-based experiences in the manner described above has several advantages. The students, who generally have no prior work experience in a psychology-related field, are able to experience first-hand and in a non-threatening way what it may be like to work in the industry (O'Shea, 2014). Additionally, such experiences likely increase the accuracy of expectations regarding working in a psychology-related field and assist in preparing students for later engagement in the workplace (O'Shea, 2008). When students were asked to indicate effective ways to learn skills and abilities that would improve their employability, responses indicated that participating in placements were the most beneficial. Additionally, one student responded that the early components of the WIL program which offer low responsibility in the beginning (i.e., their first work-based placement) were advantageous. Based on the feedback obtained, the evidence suggests that the scaffolded approach to teaching both theory and skills which gradually works up to their latter more complex placements is ideal.

Complex workplace-based WIL experiences. This last category of WIL activities is undertaken in the final two semesters of the psychology undergraduate degree. These activities are designed to extend on the foundations acquired during the former WIL activities. It is expected that by this stage students, having successfully progressed through the first four courses, will have established a level of capability around skills, content/knowledge and environment, and client interaction. As such, students are provided with the opportunity to participate in work-based placements. These placements assist students to further develop their industry knowledge, their work awareness, and enhance their generic and specific skill sets (Cooper, Orrell, & Bowden, 2010).

Example of complex workplace-based experiences. In semester 5 and 6 of the Psychological Skills program, students complete two 100-hour placements of work-based experiences with host organisations. The basic premise is that these work-based experiences provide students with an opportunity to engage in relevant workplaces, apply previously acquired theoretic knowledge, and broaden their developing psychological skill sets. It is important to recognise that these work-based experiences enable students to practise using their skill sets in a safe and supportive environment, without placing undue pressure on the student to “act as a qualified

practitioner” or perform at a level higher than their current level of education and experience would permit.

At the beginning of semesters 5 and 6, students are provided with a list of possible host organisations for their placements. Students also have the opportunity to suggest a host organisation of interest; however, the organisation is contacted by the program manager (rather than the students themselves). Generally, the students work with their host organisation on a predefined project and/or in a predefined role. Once an appropriate organisation has been identified, the program manager initiates contact between the placement supervisor at the host organisation and the student. The placement supervisor and the student arrange an initial meeting whereby both parties discuss the parameters of the placement. Discussions are held regarding attendance requirements (e.g., days per week), the level of supervision provided, objectives of the placement, and an overview of the key duties to be undertaken while on placement. The host organisations that students typically attend are broad, with opportunities in fields related to health, education, and the human services. A specific placement example is provided below.

Sarah is completing her final Psychological Skills course. She decides to complete her 100-hour placement at an organisation that manages offenders who have recently been released from incarceration. The standing arrangement with this organisation is that the student first attends an information session with her potential WIL host supervisor to discuss the role and responsibilities associated with the role. Sarah then submits an application for the role. As Sarah's application is successful, she arranges a time with her host supervisor to discuss the parameters of the placement. Sarah and her host supervisor agree she will complete her placement on Monday of each week, for a period of 13 weeks. The supervision of Sarah during her placement is discussed as well as the specific tasks Sarah will undertake. It's agreed that Sarah will shadow and assist (where appropriate) her WIL host supervisor in a wide range of tasks including interviewing, assessing, report writing, and case conceptualisation. The objectives of her placement are also discussed and agreed upon. For example, learning about the procedures and processes of the organisation, observing a range of interviewing techniques, and learning how to identify relevant information for the writing of reports. During Sarah's placement she will be exposed to real clients, visit a broad range of sites, and observe her supervisor dealing with highly complex

cases. Sarah completes her placement over the 13 week period and on completion of her final shift, Sarah and her host supervisor de-brief about the placement experience.

It is in these semester 5 and 6 placements where students gain a range of work-based experiences with multiple benefits. These placements are essentially designed to assist the students to develop work awareness and industry knowledge. These placements also assist students to be able to act with an elevated sense of career adaptability. It is through these placements that students develop an array of generic employability skills (e.g., working effectively in a team) and potentially some psychology-specific professional skills (although this is not the primary focus). Data obtained from the focus groups indicated that completing these placements both increased students' knowledge regarding working in a psychology-related field and broadened their skills sets, which in turn assisted with enhancing employability. Work experience on the job provided exposure and insight which would be difficult to replicate in the classroom. For example, a student discussed an incident that occurred on placement stating, "no amount of classroom learning can prepare you for that". The consensus in the focus group was that there are aspects of work exposure which cannot be taught; rather, an individual needs to experience these themselves.

Summary of Examples

The examples presented in this chapter demonstrate that students enjoy the learning experiences in a scaffolded WIL curriculum. The curriculum was designed around the concept of career adaptability, incorporating a range of career development learning, skills training, and field experiences. Consequently, students who exit the program after completing the six WIL courses report feeling confident in their ability to explore, plan, and make decisions related to their careers. Essentially, they report elevated feelings of confidence and self-efficacy regarding their career development. This in turn may enhance students' employability outcomes, as they display a deep understanding of the knowledge and skills linked to

successful employment. Students also indicate appreciation of how their personal attributes can help secure initial employment and sustain professional progression.

Limitations of the WIL Program

While many of the benefits associated with the WIL program have been discussed, there are also limitations and difficulties in regard to program implementation. For example, implementation of specific activities can be problematic due to the significant resources required. It can also be challenging to ensure activities are undertaken at appropriate times within the course, and that students meaningfully engage with the content. While meaningful engagement is not restricted to a WIL curriculum, it is important to ensure that activities are constructed in a purposeful manner and implemented at appropriate times over the course of the undergraduate degree (O'Shea, 2014). Additionally, it is important to ensure that when students are completing placements, whether individually or in teams, that they are adequately supervised and have the opportunity to work on clearly defined tasks. This potentially benefits not only the student, but also the team and/or organisation with which the student is placed.

Conclusion

The Psychological Skills program at USQ Ipswich comprises six WIL courses that offer a range of activities varying in both complexity (i.e., high and low) and environmental familiarity (i.e., university or employment based). Specifically, the activities include simple on-campus WIL preparatory activities, complex on-campus WIL simulated experiences, simple workplace-based WIL preparatory activities, and complex workplace-based WIL simulations. For each category, this chapter provided examples of how (and why) these activities have been embedded in the curriculum. Additionally, qualitative data was presented in conjunction with the case studies to highlight the value placed on such activities

by students who were currently enrolled or who had recently completed the program. The design of the scaffolded WIL curriculum, which was constructed around the concept of career adaptability, assists students in developing and broadening their skill set, knowledge, understanding, and expectations about working in psychology and psychology-related fields, potentially increasing their employability. This chapter focused on employability skills, understandings, and attributes which assist in making graduates more likely to be effective in regard to obtaining and being successful in employment; thus, it would also be interesting to examine employment outcomes longitudinally. While this was beyond the scope of the current chapter, future research could track students beyond graduation into employment, thus allowing for the impact of WIL to be more thoroughly explored.

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12

Post-Graduate Supervision of Indigenous Students in the Health- Related Fields

Don Gorman, Fernando F. Padró, and Nona Press

Introduction

A report by Behrendt, Larkin, Griew, and Kelly (2012) made a recommendation for the Australian Higher Education sector to increase the total of domestic student doctoral completions for Indigenous Australians to at least 2.2 per cent as a means to increase overall national research capacity. Trudgett, Page, and Kelly's (2016) article provided a background sketch of Aboriginal and Indigenous doctoral degree graduates and their career paths. Noted in the later article were the following points:

- about 4 percent of graduated doctoral students were in the Public Health area;
- for those who remain in academia, rank is more reflective of time of service; and
- the awarding of the degree “is not a ubiquitous personal panacea” (p. 76).

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Broadly, two obvious questions come to the fore:

1. Why are more Aboriginal and Indigenous peoples not pursuing a doctoral degree?
2. What about the process makes success in terms of persistence and graduation more difficult for Aboriginal and Indigenous peoples?
3. What can be done to make a doctoral degree an attractive option for Aboriginal and Indigenous peoples?

In terms of nursing education, two additional and one restated set of questions are apparent:

1. Why are Aboriginal and Indigenous peoples under-represented in nursing in general and even fewer willing to pursue a doctoral degree?
2. What are the benefits to the nation and Aboriginal and Indigenous peoples of having culturally aware and competent nursing and health related research professionals adequately represented in the communities and academia?
3. What can be done to attract more Aboriginal and Indigenous peoples to the nursing field and to specifically to doctoral programs in nursing?

Doctoral education and its practices are a product of Western tradition. A number of academics and disciplinary experts make the case that doctoral level studies—because of the Western traditions framing its practice—pose more challenges than benefits for Aboriginal and Indigenous peoples. The pedagogy surrounding doctoral preparation and supervision tends to be seen as a reinforcement of colonialism at the expense of acknowledgement, complementary understanding and practice in accepting differing cultural values in the performance of practice and generation and application of research in countries such as Australia, Canada and the USA (Chulach & Gagnon, 2016; Cross et al., 2009; Manathunga, 2015; Pijl-Zieber & Hagen, 2011; Porsanger, 2004). Cook and Helms (1988) noted the potential of discomfort based on the cross-racial relationships between doctoral students from traditionally under-represented groups with the mostly white doctoral supervisors. This feeling is compounded by the feeling that the research emanating from

the predominant models of university research by academics and doctoral students do not generate research that helps indigenous communities develop as they should (cf. Cross et al., 2009; Porsanger, 2010).

Whether a doctoral degree is a benefit or a problem exemplifies the importance of reference points in decision-making as identified by Kahneman and Tversky's (1979) article on *Prospect Theory*. It also accentuates Kahneman's (2012) later observation that humans are driven more by asymmetry of avoiding losses than achieving gain. On the one hand, race and ethnicity are a component of adequate health care for minority patients (Loftin, Newman, Dumas, Gilden, & Bond, 2012). This suggests a definable benefit for wanting to enter nursing and pursue one of its pinnacle professional recognition to advance and improve the care, interests and well-being of the Aboriginal and Indigenous communities. Herbert (2005) argued that Aboriginal doctoral students feel a doctoral education provides them with the skills to become professionally proficient and help their communities. The need to increase the number of Australian Indigenous nurses has always been critical (Hinton & Chirgwin, 2010). However, on the other hand, reproduction is an issue. The idea behind professional education is to induct students into their future professional identity and enable them to gain an understanding of the values and practices of the profession (Colby & Sullivan, 2008; Shulman, 2005).

This chapter provides a perspective of issues, challenges and some potential steps forward based on Western epistemologies. These differ from Aboriginal and Indigenous Peoples knowledge and intellectual endeavours, worldviews and research processes (Battiste, 2000; Browne, Smye, & Varcoe, 2005).

Doctoral Studies: The Dynamics of the Process and the Supervisor-Supervisee Relationship

Burton Clark (1997) suggested there is a nexus between research, teaching and study. Clark (1989) also noted the self-amplifying nature of research resulting from disciplinary differentiation of these cultural com-

munities. Doctoral studies are a synthesis of these three activities as performed by those wanting to achieve a pinnacle professional recognition (Jairam & Kahl, Jr., 2012). Regardless of the doctoral model pursued, creating a contribution to the knowledge base of a discipline and profession is based on the student's ability to learn (from autodidactic activities and/or coursework) and work with a supervisor that guides and supports the student along in the process until successful completion. At the core of these activities—or the uniting element—is the socialization of the student in various interactive settings:

- normative contexts (teaching, research, service),
- socialization processes (interaction, integration, learning) and
- core elements (knowledge acquisition, investment and involvement—Weidman, Twale, & Stein, 2001).

The university in which a doctoral student is enrolled plays a large role in shaping him or her; however, it is the supervisor who plays the fundamental role in the success of that student in terms of academic and social integration (Golde, 2000; Jones, 2013; Tinto, 1993). The student has to acquire the tacit knowledge of the discipline to better understand the subject matter, contextualise the research for the thesis and advance his or her research and teaching career (Gerholm, 1990). Otherwise, the student can become a casualty of structural isolation by virtue of the various aspects comprising the academic program that can lead to attrition (Golde, 2005).

Connell (1985) and Lusted (1986) argued that PhD study and its supervision is a form of pedagogy because it focuses on the process of learning based on the consciousness derived from thought, discussion, writing, debate and exchange that lead to transformation of the individual. The challenge rests in that the pedagogical aspects of doctoral study take a backseat to research, creating what Green (2012) called a curriculum problem. Personal and disciplinary values predominate over elements of curriculum design and implementation. Consequently, tacitness—“knowledge that is usually un verbalized and not explicitly taught” (Wagner & Sternberg, 1985, p. 437), a.k.a. “common sense” (Hedlund et al., 2006)—imbues both supervisor practice and doctoral student

experience. Successful navigation of the doctoral process and effective experiences for student—and supervisor—demonstrates a functional relationship where awareness of the driving values behind the process (distal) relies on attending to the pragmatic attention to procedural requirements (proximal—cf. Polanyi, 1966). As Bandura (1989) pointed out, individuals make reciprocal causal contributions to their own motivations and actions based on action, cognitive, affective and other personal factors alongside and environmental events. But often it is a case of becoming aware of these factors, acknowledging their influence and legitimising them in accepting the decisions related to the successful completion of a doctoral program.

On the supervisor's part, tacitness tends to act as the driver of the supervisor-supervisee experience. Much of the supervisor's approach is based on personal past experience (as a student, as junior or associate supervisor or supervising other students), identification and status within the discipline/profession, comfort with institutional processes, identification and comfort with the university, workload and longer-term career goals.

Tacitness from the doctoral student's perspective is reflected in the navigation and negotiation through the varied learning and research processes and resultant experiences. Achieving threshold concepts of the domain becomes a challenging proposition when there is no simple, prescribed approach in place (beyond specified and elective coursework in some doctoral models), at least beyond the point of general expectations and reporting processes. This, according to Vermunt and Verloop (1999) lead to either constructive or destructive frictions between the learner and the learning environment that surrounds the doctoral experience. Freedom of choice based on implicit rather than explicit knowledge and understanding of the doctoral process leads to what Weick (1995) termed a sensemaking proposition, one in which plausibility can be confused for reality. Unfortunately, available choices tend to exhibit a "fight or flight" binary; namely, adapt, adopt or ignore if the student opts to remain or leave and drop of the program (cf. Pyhältö, Toom, Stubb, & Lonka, 2012).

Both, supervisors and doctoral students make choices, often jointly as part of the process. Decisions such as approaches to the study,

conceptual/theoretical frameworks, methodology, project management of the thesis, coursework as identified to fill a gap, stakeholder identification, meeting of university and unit procedural requirements are standard occurrences in a typically negotiated process. There are also times when decisions transpire independently, especially when there is divergence of opinion. Choices of identification of critical friends, changes of supervisors if things do not work out, seeking out appropriate literature strands to inform the thesis, outreach to and valuation/prioritization of stakeholders' rests primarily on the student.

Doctoral Education as a Becoming-Being Proposition

Manathunga (2015) observed that:

Current university policies and research on doctoral pedagogies... [tend] to frame this form of pedagogy as project management... excludes the unpredictable, creative outcomes and obstacles possible in research and ignores the operations of power between supervisors and students... [rendering] invisible the important cultural and historical dimensions involved when supervisors work with culturally diverse international and domestic research students. (p. 2)

If doctoral education is a transitional and transformative experience based on the belief of a personal and/or professional payoff (Baxter-Magolda, 2014; Padró, *in press*; Press & Padró, 2017), then there is more to the doctoral education process than project identification and management, it involves a change of identity to reflect a new reality. Transformation occurs in the sense of creating a new identity through the educational process. If Pyhältö, Vekkailla, and Keskinen's (2012) definition of pedagogy as an active process of production and exchange between the teacher, the learner and the knowledge they together produce rooted in the context of the particular context of a scholarly community and affected by various resources and demands of the environment is applied, the exchange and results of the doctoral education experience are based on the doctoral student understanding what the profession entails and the

reciprocal recognition of being accepted as a member of the profession. It is in effect the meshing of two world views. Change is based on the interaction of personal experiences with disciplinary and university expectations. Two different 'lived spaces' converge in a third space. One lived space is the doctoral student's learning ecology (Kek & Huijser, 2017) that embodies prior experiences, relationships and other interactions with their surroundings and resulting values that are the sum total of their formal and informal learning that these interactions represent. These represent what Moll and González (1994) termed 'funds of knowledge' that are elements of Astin's (1985, 1993) inputs-environment-output (IEO) model that places this prior knowledge as factors impacting student learning (positively or negatively). The lived space is a multidimensional social world replete with biopsychological characteristics—physical, social, and symbolic—shaped by nested distal and proximal environments (Bourdieu, 1991; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006) that influence how a doctoral student reflects on personal efficacy, the soundness of thoughts and actions, the meaning of their pursuits and what change (if any) needs to happen (Bandura, 2009).

The second lived space is the university curriculum. Curriculum is the planned learning opportunities for learners and the experiences learners encounter upon its implementation providing interconnectedness of experiences within and outside the classroom (Kek, Padró, & Huijser, *under review*; Press, 2018). Curriculum acts as a controller and governor of formal learning because it fabricates the system of reason that prevails within this space, regulating by directing how a student should act, feel, talk as well as how to see the world and oneself (Popkewitz, 2001, 2007). Curriculum reflects two points that need to be considered: [1] the prevalent cultural capital behind the process of how knowledge should be disseminated and [2] the disciplinary level *governmentality* based on the belief that the members of the profession know best. The first point denotes how action or practice is determined by habitus and the recognised capital (status and legitimacy of role) possessed which, in turn, bounds a student's ability to manoeuvre within the selected professional discipline (Ho, 2009). The second point is about how professions (and academic disciplines) govern or regulate through a network of communi-

ties of practice of academics and practitioners, professional bodies and, at times, regulatory agencies that shape the profession's public image and their understanding of what the profession represents (Evans, 2008; Foucault, 2007/1978).

A third space comes into being when there is an interaction where the perceived, conceived and lived spaces of the student and the university culture come together in a qualitative, fluid and dynamic manner (Lefebvre, 1991/1974). These 'lived spaces' entail the contradictory dialectical critiques of alienation and liberation that the transformation embodies (Kipfer, Goonewardena, Schmid, & Milgrom, 2008). This third space creates a hybrid identity where the two other spaces vicariously address each other through iteration and translation (Bhabha, 1994). There is a peculiar and complex aspect to the lived space because it is here where a student makes the disciplinary knowledge and the broader sociocultural symbols from personal experience and social expectations into a personal understanding of things and events, especially when favourable circumstances are in place (Lefebvre, 1991/1974). How well an individual identifies as a member of the profession is the result of the bounding or limiting elements of personal action in relation to social constructs as represented by a curriculum and aligned social expectations and personal experience. This can help explain the high attrition rates of traditionally under-represented students as the cultural clash (often along with the financial challenges) may be too great for it to be overcome by the acculturation process that formal education represents as exemplified by the high attrition rates that are pandemic throughout universities offering doctoral degrees. At question is the freedom of supervisors and doctoral students have to produce a fair, negotiated situation in the determination and acceptance of doctoral research (cf. Rawls, 1970). The personal lived space, with its prior experiences and characterized value system, should not have to clash with the obligations imposed by university and disciplinary expectations.

Another way of looking at the two worlds of student and profession is to revisit the nineteenth century notions of *Lernfreiheit* (freedom to learn) and *Lehrfreiheit* (freedom to teach). Broadly, *Lehrfreiheit* is based on academics and academic departments being able to decide on academic grounds who may teach, what may be taught, how it shall be taught, and

who may be admitted to study (U.S. Supreme Court Associate Justice Felix Frankfurter's concurrent opinion in *Sweezy v. New Hampshire*, 354 U.S. 234 (1957)). At the procedural level, when it comes to doctoral pedagogy, it is framed in terms of:

- assisting in developing appropriate project management processes,
- enculturating the doctoral student to be a member of a disciplinary community,
- promoting the student's critical thinking to advance analytical prowess and questioning capacity,
- getting the student to develop him or herself and
- developing a quality relationship based on maintaining student enthusiasm, inspiration and a demonstration of care (Lee, 2009).

What *Lernfreiheit* means in this discussion is an elusive exercise because most of the literature's focus has been on the academic staff, making the notion of student academic freedom come across as a by-product (Macfarlane, 2012). Nevertheless, *Lernfreiheit* stands as the opposite of indoctrination, if for no other reason it refers to discover what it is the student does or does not know and how to develop his or her knowledge base (Hernes, 2013). Academic freedom from this student perspective, at least from its original roots is about "the atmosphere of consent that [surrounds] the whole process of research and instruction" (Hofstadter & Metzger, 1955, p. 387).

Doctoral pedagogical practice in the third space can be treated as a metaphor for the elusive exercise of naming and framing, of working with and within language and a representation of the distance between the habits it inculcates in the student, and prior pedagogical practices from previous schooling, the surrounding community and even the family environment itself (Lee & Green, 2009; Bourdieu & Passeron, 2000). The relationships between the doctoral student and the doctoral experience takes on different approaches based on disciplinary practices, personal supervisor preferences and university policy and procedures that should but do not often take into account the personal space. Nerad (2012) identifies these approaches as:

- the apprenticeship model, which is the oldest and widest accepted approach shaping interactions between students, supervisors and universities;
- the top-down professional socialisation model, where the student transforms from a consumer to producer of knowledge and status moves from novice to junior colleague;
- the community of practice model, where a new member of the doctoral student community moved from the periphery to the centre by taking on more complex tasks and assuming more responsibilities;
- the mentoring model, which places the responsibility on the supervisors; and
- the ‘global village’ model, in which coordinated efforts among universities, national and international funding agencies, and learning communities “combine the work of imparting traditional, professional, and cultural competencies with the use of conceptual learning models that encompass the entire learning context, including its various learning communities” (p. 65).

Learning in this third space can be a messy proposition as it leads to what Bertalanffy (1968, 1969) called active personality system, a focus on the whole person based on the cybernetic interactions of many variables such as organisation, regulation and goal-directedness and worker flows. Doctoral pedagogy is geared toward preparing the doctoral student into an academic and/or practicing professional outside academia. The doctoral experience, therefore, becomes a proposition not unlike Heidegger’s (2008/1927) ontological notion of *Dasein*, that of being and becoming. The doctoral student:

... understands [oneself] in terms of personal existence, in terms of [the] possibility to be [oneself] or not to be [oneself]. Da-sein has either chosen these possibilities..., stumbled upon them, or, in each instance already grown up in them. Existence is decided only by each Da-sein itself in the manner of seizing upon or neglecting such possibilities. (p. 10)

Entering the community of scholars, as with any community of practice, reflects a willingness to share values and find value on what members

have to contribute in order to create new meaning (cf. Lahenius, 2012). The resulting 'hybrid' characterisation of being a professional, challenges the traditional supervisor-supervisee notion of 'authorship' as a personal rather than impersonal undertaking (Lee & Green, 2009) or one involving other participants in the process. Overcoming the challenge means the creation of a flexible environment based on shared control, meaningful interaction between the supervisor, the student, peers within the academic community, and community elders and leaders from their community (Pyhältö, Toom, et al., 2012).

The Doctoral Student Experience of Aboriginal and Indigenous Peoples

Each aspect of being and becoming a person achieving a pinnacle recognition in his or her area of endeavour is based on history and tradition, mainly Western history and tradition. Being and becoming involves a transformation of the self through the decisions made and the choices manifested in the doctoral student's resulting actions typically bounded by Western symbols that make up the processes emanating from the tradition. The successful transformation from becoming to being reflects the person's ability to embody the routines and traditions (Dall'Alba, 2009) of their area of study epistemologically (knowledge of the field) and ontologically (being), as supported by the praxis (becoming). Being and becoming under these propositions encapsulates personal achievement through personal agency and successfully negotiated (and not atypically strategic) interdependency with peers and supervisors recognised and legitimised by others through the acquisition of the degree. However, how much of the personal identity has to change?

Lee & Green (2009) were concerned that the production of research overshadows the supervisor's pedagogical praxis, disadvantaging the doctoral student's identity transformation by emphasising disciplinary and institutional values at the potential expense of the student's core beliefs and sense of self. Interactions and relations are central to the supervisory pedagogy and these reflect the everyday practices of the university's pre-

vailing scholarly community (Grant & McKinley, 2011; Pyhältö, Vekkaila, & Keskinen, 2012). This is especially the case when it comes to research, as knowledge creation is the culminating experience of a doctoral degree.

However, the observable cultural clash reflects the realities of promotion at the university for supervisors (Cross et al., 2009). The reason: the supervisor acts as the stand-in for the discipline/profession with overtones of oversight. This suggests more of an apprenticeship or discipleship approach to the relationship than that proposed by the authorship archetype that leans to emphasising the personal focus from the student's perspective, the give-and-take relationship and the more pastoral focused (based on trust and respect) association (Lee & Green, 2009; Manathunga, 2015).

Pedagogy bridges the gap between the students' understanding about what research is and those of the university (and its academics) that otherwise acts as a barrier to the successful completion of the degree (McCormack, 2004). Unfortunately, the literature mainly talks about the supremacy of the traditional academic knowledge over other forms of knowledge, creating tension and conflict for students in the production, ownership, and use of knowledge (McKinley, Grant, Middleton, Irwin, & Williams, 2011). The unintended consequence has been rendering invisible the cultural and historical dimensions that Aboriginal and Indigenous Peoples represent (Manathunga, 2015). The observable cultural clash is reflective of the realities of promotion at the university for supervisors (Cross et al., 2009). Supervisors act as the stand-in for the discipline/profession with overtones of oversight. This suggests more of an apprenticeship or discipleship approach to the relationship than that proposed by the authorship archetype that leans to emphasising the personal focus from the student's perspective, the give-and-take relationship and the more pastoral focused (based on trust and respect) association (Lee & Green, 2009; Manathunga, 2015).

In terms of research, as Pidgeon and Hardy Cox (2002) wrote:

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. (p. 96)

In sum, the prevalence of *Lehrfreiheit* as the controlling worldview over *Lernfreiheit* has meant that Aboriginal and Indigenous Peoples cannot fully embrace their *Lernfreiheit* as other doctoral students can if it means their own cultural identity cannot fully accommodate or embrace the Western notions of profession and the symbolism of a doctoral degree. *Lernfreiheit* in principle refers to the ability of students to freely attend lectures and moving from one university to another. But it also represents the ability of students to partake of study in a manner in which different perspectives are presented and discussed without prejudice based on a lecturer's values (Weber as he discussed issues of academic freedom at the Second German Conference of Teachers in Institutions of Higher Education in, 1908 as cited in Dreijmanis, 2008) rather than as Max Weber, as Josephson (2004), pointed out, "orthodox professors... using academic freedom as a cover for ideological standardization" (p. 215). To use the nineteenth century Roman historian Theodor Mommsen's nomenclature, Aboriginal and Indigenous doctoral students are in a *foedus iniquum* (an unequal treaty) between them and/or supervisor(s) and 'home' university.

Higher degree research (HDR) and doctoral students often select supervisors based on the supervisor's reputation, the intellectual compatibility between supervisor and supervisee, and the pragmatic benefits emanating from the relationship such as a favourable work environment (Zhao, Golde, & McCormick, 2007). It is this relationship that is often key to success; however, there are challenges that directly impact Aboriginal and Indigenous Peoples capabilities to succeed at the doctoral level:

- Access to a broad a range of supervisors with experience and a track record (Behrendt et al., 2012) compounded by predominance of supervision performed by non-Indigenous academic staff (Trudgett, 2011).
- The need for "supportive and knowledgeable advisors" (McKinley et al., 2011, p. 119).
- The ability for Aboriginal and Indigenous Peoples doctoral students to establish a reciprocal relationship with supervisors, to establish trust with the supervisors and to be able to establish a relationship that allows the doctoral student to handle distractions (Henry, 2007).

- Framing the doctoral study experience as a cognitive apprenticeship model (Austin, 2009).
- Lack of peer support from other doctoral students and communities of practice as well as from outside the university environment (Lahenius & Martinuso, 2011; Wisker & Robinson, 2014).
- The formulation of research questions, methodology and values driving the decisions of a doctoral thesis (Wisker & Robinson, 2014);
- The presence of organisational dynamics—including a lack of Aboriginal and Indigenous Peoples academic staff members—within universities that marginalise the advancement of social goals related to equitable participation (Schofield, O'Brien, & Gilroy, 2013).

There are other issues adversely impacting Aboriginal and Indigenous Peoples access and success in traditional higher education settings as well, especially in post-graduate education based on the need to overcome impediments such as the barriers of financial hardship, diminished academic preparation, multiple family and community responsibilities, and/or ill-health (McKinley et al., 2011; Trudgett, Page, & Harrison, 2016). The number of Aboriginal and Indigenous Australians completing doctoral degrees is disparately less than that of the non-Indigenous population (Trudgett, 2014). An unsatisfactory relationship is strongly implicated in the decision to leave and not persist with their doctoral research (Zhao, Golde, & McCormick, 2007). Even though accurate historical data is hard to find (Trudgett, Page, & Harrison, 2016), Australia's Department of Education and Training 2015 Awards Course Completion data Table 14 (Award Course Completions for Indigenous Students by Level of Course, 2001 to 2015) shows there have been a total of 305 doctorate by research graduates from 2001 to 2015, for an average of about 20 doctoral degrees per year, with 27 graduating in 2014 and 25 in 2015 (Department of Education and Training, 2016). On average, full-time students took 4.5 years to complete the doctoral degree while it took part-time students 6.1 years and those students combining full- and part-time enrolment 5.9 years to successfully finish their doctoral degree (Trudgett, Page, & Harrison, 2016).

Aboriginal and Indigenous Doctoral Students in the Health Fields

There is disappointment that research has not reached expected levels of improvement in Indigenous Australian health (Gorman & Toombs, 2009). Laycock, Walker, Harrison, and Brands (2009) best laid out the challenge:

The challenge of finding ways to improve Indigenous health requires knowledge of the highest quality generated through processes that take into account the realities of Indigenous lives and Indigenous communities, of government policy making and bureaucracy, and that are built out of collaboration, respect and trust. It is a large and complex task—and the pool of researchers available to carry out this work is small. We need more skilled researchers with the expertise to work in these complex areas, and we particularly need more skilled Indigenous researchers. (p. i)

One major issue for the disappointment is the mismatch between traditional research methodology utilised by most academics and the Indigenous cultural view of knowledge, its ownership and purpose (Gorman & Toombs, 2009). This is in addition to the inter-professional clashes within the health fields where one unilateral view is challenged by the presence of other professions (Sterrett, 2015). The linearity of approach nursing as a profession contributes to the management of society through a vast range of power techniques that does not recognise alternative forms of knowledge and create tensions within everyday education practices in the field (Darbyshire & Fleming, 2008; Holmes & Gastaldo, 2002, 2004). The lack of experience preparedness by nursing academic staff regarding requires new information and new strategies to connect meaningfully with these students; otherwise, the feeling of unfamiliarity, foreignness and/or hostility to their presence is magnified (Martin & Kipling, 2006; Usher, Lindsay, Miller, & Miller, 2005). According to Australia's National Health and Medical Research Council (NHMRC, 2003), "[when] making judgements about Aboriginal and Torres Strait Islander Peoples, Australia and its public institutions must acknowledge the history, and bridge the difference in cultural outlooks to

find a fair, respectful and ethical way forward” (p. 2). Yet to be satisfactorily answered is the critical question of “how does Indigenous capital become valued within a mainstream structure that continues to reinforce the [pedagogical authority] of mainstream society” (Pidgeon, 2008, p. 142)?

A Proposed Model for Working with Aboriginal and Indigenous Peoples Doctoral Students

Identification is a tricky proposition as it operates across differences between self and the environment based on discursive work to produce what Hall (1996) termed “frontier effects” from interactions between symbolic boundaries. These effects come about because as Mezirow (2000) pointed out, learning is a process of using prior interpretation to modify or create new knowledge in preparation for future action. The literature on increasing the participation of Aboriginal and Indigenous Peoples as doctoral students in higher education clearly points to the importance providing ongoing academic, personal and cultural support to Indigenous students (Hossain, Gorman, William-Mozely, & Garvey, 2008). To move in this direction, particularly for prospective and current Aboriginal and Indigenous people doctoral students, the focus of attention has to be the lived space of the student. This is where the student’s actual learning and making of personal meaning occurs. The frontier effects from the interactions within the triadic nexus of student, academic staff and university as an institution should maximise rather than inhibit capability emanating from the different interactions between the student, academic staff and supervisors. This is achievable by:

- reconsidering the relationship between the supervisor and the Aboriginal and Indigenous People supervisee;
- generating more effective forms of intercultural communication within the university along with the recognition and acceptance of Indigenous research paradigms;

- encouraging the transcultural possibilities of working across the boundaries of Indigenous and Western knowledge systems as hoped for by Manathunga (2015);
- letting HDR students give themselves permission to increase their commitment to ground their studies in their own cultural knowledge systems (Henry, 2007);
- empowering and enable students to become change agents (ACER, 2011); and
- promoting the recruitment and providing mentoring opportunities to increase the capacity and knowledge base of Aboriginal and Indigenous peoples academic staff to supervise Aboriginal and Indigenous peoples doctoral students.

The consensus among Aboriginal and Indigenous Peoples students is that supervision played an important role in the academic experience (Behrendt et al., 2012). Ideally, supervisor guidance provides the student a salve to counter the identified pitfalls (Pyhältö, Toom et al., 2012). This can occur by having academic supervision approaches taking into account and respecting the background of the student, the background of the supervisor and the nature of research in Aboriginal and Indigenous Peoples health (Laycock, Walker, Harrison, & Brands, 2009, p. 44). Supervision works well when the relationships and understanding are reciprocal—especially so when working with Aboriginal and Indigenous Peoples research and researchers—and based on openness to different research approaches, critical discussion of research and practice and supervisor flexibility (Laycock et al., 2009; Pearson & Kayrooz, 2004).

Grant (2010) argued that doctoral supervision needs a learning and teaching lens applied to its praxis. This praxis is about preparing doctoral students for challenges, providing strategies for success and honing research skills (Brown et al., 2009). Pearson (1999) suggested a doctoral supervision framework that conceptualises doctoral education as more than an overemphasis on rules and procedures. Doctoral supervision should not simply be a collection of tasks carried out by the doctoral student. Instead, supervision in terms of advocacy and intercession on behalf of the student should reflect Bohr's (1963) complementarity in the lived space of where and how doctoral student learning occurs and in the

negotiated realm of legitimising and accepting practice, in this case research paradigms.

At present, doctoral pedagogy is mediated through a formal recognition that western practice attempts to understand concrete lived experiences by means of language while other cultural methods may practice other techniques (van Mannen, 1990). Rather than looking at experiential and methodological clashes resulting from different epistemological and ontological approaches and techniques, doctoral supervision should focus on identifying and recognising the differences and work through these in a manner that recognises and validates (legitimises) the differences in methodologies and related techniques. By so doing, accrued benefit to the Aboriginal and Indigenous Peoples communities increase due to improved effectiveness emanating from a non-imposed, external set of recommendations based on an innate understanding and cooperation between the communities and doctoral student researchers.

To begin with, having a targeted approach to assist Aboriginal and Indigenous Peoples transitioning into doctoral programs may improve enrolment and graduation rates (Pidgeon, Archibald, & Hawkey, 2014). Once admitted and enrolled in the program, doctoral supervisors need to understand that Indigenous students often have strong commitments to their extended family, their community and their country that take precedence over their studies. These commitments must be understood and accommodated within the supervisory relationship. Ignoring the relationship that an HDR student has with his or her community the student may not feel that they can communicate with their supervisor to the degree necessary for them to provide appropriate support (Laycock et al., 2009). Supervisors also need to be aware that the selection of methodology for projects/studies may be a challenge that has to be addressed. Cultural acceptance on the part of the Aboriginal and Indigenous Peoples doctoral student and the community that doctoral student represents cannot be ignored in preference toward a bias to satisfy supervisor and examiner expectations pertaining the rigour of the selected approach (Laycock et al., 2009). The Task Force on Native Americans in Social Work Education (Cross et al., 2009) recommended promoting the equal value of alternative community-based research methodologies predicated on cultural competency and that universities demonstrate their commit-

ment by allowing community-based research to be an accepted form of research for academics at promotion time and for retention purposes. Research projects related to Aboriginal and Indigenous Peoples should reflect the values of spirit and integrity, reciprocity, respect, equality, responsibility, survival and protection (NHMRC, 2003).

Conclusion

Many of the options we face in life are “mixed”: there is a risk of loss and an opportunity for gain, and we must decide whether to accept the gamble or reject it. (Daniel Kahneman, 2012, p. 283)

Kahneman's view of options references the capability to make choices based on what an individual manages to do and be or what Sen (1993) called 'functionings' to achieve a desired result. The doctoral experience of Aboriginal and Indigenous Peoples at many universities presents an example of obstacles toward promoting personal and collective/group capabilities to promote and encourage health-related field research to improve Aboriginal and Indigenous Peoples community wellness. To paraphrase Walker (2010, pp. 898–899), why are Aboriginal and Indigenous Peoples not given more opportunities to convert their resources into capabilities that other doctoral students? One potential answer is that university post-graduate degrees are part of disciplinary and organisational/institutional reproduction—what Maturana and Valera (1980) termed *autopoiesis*, meaning that reproduction becomes the problem due to enforcing Western values at the potential expense of personal cultural values.

Many current and potential Aboriginal and Indigenous Peoples doctoral students have doubts about their ability to succeed in higher education. Proposed in this chapter is based on rethinking the curricular/pedagogic practice space relating to the acceptance of cultural traditions and values shaping the doctoral student's perspective and how the doctoral experience is valued. The recommended paradigm shift is not different from what others have called for (e.g., Henry, 2007; Laycock et al., 2009; Manathunga, 2015).

Support and mentoring relationships are an important strategy for their success at the undergraduate level as a means of overcoming the barriers and cultural challenges they face. The relationship between supervisors and their Indigenous students becomes even more important for those undertaking post-graduate research studies because of the cultural barriers impacting success in areas not normally considered such as the selection and utilisation of research methodologies. A trusting relationship is needed based on authentic encouragement and recognition by the supervisor that recognises and re-enforces the student's capacity, the value of his or her cultural and intellectual capital, and notion of self while challenging the student to extend him- or herself.

There is no concise guide or set of instructions that guarantee success (Trudgett, 2011). The curricular aspect of doctoral supervision suggests that supervision is a directing mechanism in personal meaning formation and future identity, doing so through formal and informal procedures (Press & Padró, 2017). Formal processes define the identity through the lens of reproduction and, in the case of doctoral students who are Aboriginal or Indigenous Peoples and have a different and in certain respects clashing sense of cultural reproduction, proposing a binary possibility of either accommodation through recognition of differences or assimilation. Informal processes between supervisor and supervisee can and does emphasise one of the two choices. Assimilation in this case means changing personal identity to identify with the Western symbols, traditions and values of what an education is. Accommodation comes in two ways: [1] completely accepting and valuing Aboriginal and Indigenous Peoples knowledge or [2] finding a common ground that represents a hybrid sense of identity that synthesises divergent views, creating a new perspective. The former generates resistance from disciplinary methodologists—or as Busoni (1911) called them, lawgivers—representing and defending orthodoxy chafing at acceptance and valuing of a different way of thinking because it does not represent methodological purity as per their definition of appropriate research. The latter is based on cultural value founded on structure of difference, with difference emerging from strategic and contingent perspectives (Bhabha, 1994). There is a resulting double contingency that creates a normative orientation of a shared symbolic system based on a complementarity of expectations built on inte-

grating of mutual expectations (Parsons, Bale, & Skills, 1953; Vanderstraeten, 2002). Without the integration this form accommodation cannot occur because it negates acceptance by bringing to the fore a sense of interdeterminacy to identity formation. However, as Luhmann (1995) pointed out, this paradox of indeterminacy produces a tension present in the background that may not go away fully due to some unease about the agreement (from the disciplinary/professional and institutional perspectives) or the identity and subsequent characterization in practice of the doctoral student (as a student or later as an academic, practitioner or researcher). Mitigating or possibly resolving this tension emanating from double contingency is the interpenetration or reciprocal enablement (Luhmann, 1995) between the Western academic traditions and the Aboriginal and Indigenous Peoples knowledge and traditions through acceptance which leads to a greater degree of freedom of action based on a better understanding of the two cultures. This does not mean an amelioration of cultures per sé, but rather a recognition of mutual benefit based on respect and acknowledgement of benefits that the two sets of knowledge represent to each other.

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13

The Complex, Multi-layered Business of Developing Quality Professional Education in Universities

Sara Hammer

Introduction

University undergraduate and postgraduate, professional programs must be fit for purpose: that is, their design and delivery should result in intended outcomes for students. In the context of professional degrees, their design assures professional standards and professional body expectations (Henard & Leprince-Ringuet, 2008). Quality standards in higher education in Australia and elsewhere emphasise, amongst other things, student participation and attainment, the learning environment, teaching, research and research training, and institutional Quality Assurance processes (Australian Government, 2015; ENQA, 2009). Author accounts in this first of two volumes on quality practice in the professions focus on the following areas: unit design and teaching, learning outcomes and assessment, blended and simulated learning approaches, student

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diversity and equity, and support for and barriers to program quality enhancement.

The work in these case studies highlights the inherent complexity of delivering on expected graduate outcomes for the professions. In this chapter I will argue that this complexity stems from two principal domains: the conceptual, and the contextual. First, developing quality curricula that is fit for purpose requires university teachers to leverage, analyse and synthesise a wide range of learning concepts including those embedded in professional standards and capabilities, employability skills, institutional graduate attributes statements and career development skills inventories. Second, increasing pressure on professional degrees to deliver particular outcomes for their graduates, in the context of stakeholder negotiation, shrinking budgets and increasing calls for the inclusion of diverse groups, places university practitioners at the centre of, sometimes conflicting, societal and economic forces.

Accordingly, each case study examined in this chapter will be organised based on whether they illustrate the successful navigation of the conceptual and pedagogical complexities inherent in assuring quality professional curricula, or where their case highlights more contextual elements that shape curriculum design and implementation processes. This latter theme can be further conceptualised as social, political, economic or cultural in orientation. This chapter concludes that despite the success of initiatives described in case studies examined in this book, achieving educational quality for the professions is a rewarding, yet far from straightforward, enterprise.

Background

There has been an increasing emphasis over time on universities meeting the requirements of employers and professional bodies, and to some extent governments (TEQSA, 2015). Professional, university education must satisfy the desires of many. However, quality professional education is not the simple sum of those desires. According to Holt, Mackay and Smith (2004), quality professional curricula are

...shaped by the interplay of various stakeholder concerns: those of the different academic disciplines and departments contributing to the curriculum; the expectations of industry and professional associations; and the students themselves. (Holt et al., 2004, p. 2)

From the perspective of universities as education providers, quality professional education must deliver more than the technical skills, attributes and work-readiness capabilities graduates require for success in the workplace. The university experience should also capture graduate capabilities and attributes prized by universities themselves: those that reflect what is “higher” in higher education. The American Association of Colleges of Nursing (AACN) refers to such a “value-add” in the following statement: “education has significant impact on the knowledge and competencies of the nurse-clinician...nurses are prized for their skills in critical thinking, leadership, case management, and health promotion...” (AACN, 2017, p. 1). At face value, the value-add of colleges for the nursing profession seems clear, with commonly referenced educational outcomes such as critical thinking, presumably understood and agreed upon by educators and the profession alike.

Yet accounts such as this can mask tensions and disagreements between educators and professional stakeholders about the meaning and intent of particular quality outcomes of the professional curriculum. The requirement of university programs to undergo professional accreditation, positions professional bodies as key custodians of requisite professional practices and standards. In many ways this should come as little surprise. According to the theory of the professions, professions preserve and pass on traditions, which, “engender modes of life, habits of thought, and standards of judgement” (Traulsen & Bissel, 2004). Professional habits of thought and standards of judgement are likely to influence how professions and professional bodies interpret the meaning of particular desirable educational outcomes, as well as how such outcomes ought to be taught and assessed. Meanwhile, academics of professional disciplines are required to navigate the expectations of their original professional community alongside those of their new profession in the academy. For example, Michelsen, Vabø, Kvilhaugsvik, and Kvam (2017) explore the interaction between professional and disciplinary communities in

program outcomes design. They conclude that at its most fraught the involvement of professions in the design of learning outcomes may divert their function from that of describing intended learning towards that of preserving the status quo of particular professions. Hughes and Barrie (2010) examine influences on the assessment of graduate attributes in higher education. They argue that in professional degrees the significant influence wielded by industry stakeholders may result in positive outcomes for assessment practices, such as the use of more authentic, contextualised assessment tasks. However, they (Hughes & Barrie, 2010) claim that this influence “also runs the risk of patchy implementation or of limiting the assessment focus to tangible workplace competencies at the expense of transformational aspirations...of many universities” (p. 328).

The complexity of negotiating differing stakeholder views about the desired outcomes of professional university education is exacerbated by the more fundamental difficulty of interpreting such outcomes. Seminal Australian work by Barrie (2006) underscores the tendency of academics to hold differing perceptions about the nature of graduate attributes, which itself impacts on the way they are taught and assessed. Up until the present, commentators have observed that researchers and program stakeholders tend to conflate various terms used to describe graduate learning outcomes, such as graduate skills or attributes and employability skills or dispositions (Oliver & Jorre de St Jorre, 2018). Studies have also highlighted disagreement between stakeholder groups about which particular graduate attributes or employability skills are seen as important, or to what extent they are a focus of professional programs (Oliver et al., 2010).

In addition to the issue of the conceptual complexity of assuring specific graduate outcomes (Green, Hammer, & Star, 2009), professional education in universities also takes place against a backdrop of evolving and sometimes, dramatic change (Feigenbaum & Iqani, 2015). Contextual factors that influence decisions about professional program design and implementation can be categorised as socio-political (O’Meara & MacDonald, 2004), economic (Feigenbaum & Iqani, 2015) cultural, and even emotional (King, 2006). The chapter will now examine cases from volume one that illustrate successful initiatives in which one or more of these challenges are navigated.

Navigating Conceptual and Pedagogical Complexity

A range of published examples in the secondary literature make clear the conceptual complexity of learning constructs such as graduate attributes, professional competencies and standards (Green et al., 2009; Hammer, Chardon, Collins, & Hart, 2012). For example, in the case of an Australian law school, researchers (Hammer et al., 2012) found that while legal educator participants valued lifelong learning, their responses to questions showed a lack of precision about how particular aspects, such as learner autonomy, could be developed. The consequence of higher education teachers' lack of clarity about how to conceptualise and develop specific attributes is that relevant program curricula fail to address them. A review of Australian accounting degrees in 2004 also highlighted this phenomenon (Mathews, 2004). The aim of the review was to assess the extent to which professional accounting standards were driving consistency across relevant programs. An associated finding was that a lack of guidance about how particular professional standards should be developed meant that some intended professional outcomes were not evidenced (Mathews, 2004).

A number of cases presented in this monograph showcase specific learning and teaching strategies that successfully target the development and assessment of desired professional knowledge, standards, and competencies. Nash, Chalmers, Brown and Stupans' chapter on the pharmacy profession outlines a successful initiative to develop students' lifelong learning skills by requiring them to self-assess against their National Competency Standards at the conclusion of each exam. Similarly, Downer and Slade's chapter on using ePortfolios to prepare undergraduate students for professional practice provides a detailed example about developing students' lifelong learning capacity of professional judgement using Gibbs' (1988) six steps of reflection. Students used the reflection process authors described in this case to connect their learning with relevant professional standards and reflect on their performance as they progressed through the Midwifery program.

Simulations can be an effective learning and teaching strategy in professional disciplines to bridge the gap between university education and professional practice. Haraldseid, Aase and Aase describe a Norwegian university inter-professional training initiative to develop nursing and medical students' non-technical skills: a full-scale simulation that took place in a clinical skill lab, followed by a debriefing activity. Student participation in the form of student feedback and shared decision-making was incorporated into different stages of the session design process. This strategy enabled teachers to deeply understand student learning needs and generate creativity of thinking and student buy-in. Student feedback also enabled teachers to identify traditional patterns of behaviour shaped by professional roles and culture for nursing and medicine, as well as a lack of shared knowledge between the two student groups, which could inform the current and future design.

In their case, Nordkvelle et al. share the approaches and outcomes of three different simulation approaches undertaken in three different disciplines. In Nursing, the simulation took the form of a clinical skill lab, with only a few students playing active roles and the remainder observing and debriefing after the role play. In the legal, simulated 'moot' court session law students either played an active role as part of the course case, or they played members of the audience. In both of these two simulations, teachers play an active role: either as coaches or participants. By contrast, Management students worked on a role-play activity in teams. All students played an active role, but the role of the teacher in preparing the students ended before the role plays began. In all three cases, students perceived simulations as productive, even though they clearly understood that they were participating in a "practical lesson", rather than professional practice per se. Nonetheless, each case presented by the authors of these two chapters highlight the pedagogical complexity required to bridge the gap between education and professional practice.

In addition to applying effective pedagogies, successful professional learning also requires teachers to be knowledgeable about appropriate learning supports or learning "scaffolds" that help students by providing a bridge between their prior learning and what must be learned. Gorse, Cozzens, Scott and discuss mixed modes of delivery for professional education. They agree that digital environments are used increasingly in

professional practice and can provide opportunities for greater connection, and higher order thinking. However, Gorse et al. argue that digital enhancements be implemented incrementally and consultatively, to ensure that resulting learning environments and activities are educationally and professionally fit for purpose. In his chapter, Kinchin argues that concept mapping be used as a scaffold to facilitate professional learning. Concept maps can be used in curriculum design to make explicit for novices the expert knowledge structures, which inform and interact with procedural knowledge in a given professional field.

Other author accounts highlight the use of concepts such as “viability” and “employability”, curriculum lenses such as “competency”, “career development” and “transition”, and tools such as the ePortfolio to assure the professional outcomes in university curricula. In her chapter about nurse education in the UK, Karstadt applies the concept of viability to assess and enhance the quality of curriculum knowledge within nursing education in terms of its applicability and meaningfulness to individual students’ practice in the professional space. However, other concepts, such as employability, are used by authors in a more informal sense, such as a broad desirable outcome for students, which can be used to ensure that a curriculum is fit-for-purpose. In their account of a Work Integrated Learning (WIL) program for Psychology undergraduates, authors Marrington, O’Shea and Burton describe the development of employability skills as a key outcome for graduates. Yet, informality does not equate to simplicity. For example, the outcome statements used by these authors to design and develop the curriculum included both institutional graduate attribute statements and professional competencies. Both are seen as contributing to graduate employability. However, curriculum designers must navigate a range of interpretation, language use and overlap associated with synthesising learning outcome statements from differing sources.

It is clear from these accounts of professional education practice that a high degree of rigour combined with a level of dexterity in teaching conception, design and approach is required to assure desired professional graduate outcomes. However, teachers of the professions must also navigate further layers of complexity associated with the exigencies of context as part of developing quality curricula for professional degrees.

Navigating Context

Social, political, economic and cultural factors form part of the quality assurance context for professional university programs. This definition refutes the idea of curriculum development and change as an idealised, mechanistic incorporation of value-neutral, curricular elements. A more authentic view of curriculum change acknowledges a social dimension that is replete with tensions, power imbalances, the possibility of resistance, and even of conflict. A study of curricular renewal in an Australian Creative Arts School (Hammer, McDonald, & Forbes, 2014) highlights this dimension, as this reflection by an author-participant suggests:

It was challenging to find myself in a leadership role for the discipline (and having to institute change) without any official recognition of that leadership. I needed to learn 'on the fly' how to negotiate from this somewhat nebulous position. At times, this diverted energy away from the task at hand. (Hammer et al., 2014, p. 57)

A study by King highlights some highly social, emotional aspects related to the interpersonal dimension of curriculum change. Academic interviewees expressed frustration and anger as a result of loosely structured, re-iterative curriculum development processes, difficulties with scheduling because of clashing timetables, the negotiation and consensus-building required for collaborative decision-making processes, and issues of increased workload or role definition (King, 2006). With so little research in this space, to date, the emotional, interpersonal labour associated with professional curriculum change is likely to remain unacknowledged by university managers and poorly understood by professional groups in the short to medium-term.

Evolving societal expectation about the cultural inclusiveness of professions may also form part of the wider context of program quality assurance and is exemplified by Goldman and Trimmer's account of culturally inclusive models of nursing care in Australia. They argue that culturally inclusive models of care require transformative practices related to the teaching of nursing students, and to the practice itself. However, where there has been limited behavioural change at the level of the profession,

as in this case, university programs and university graduates themselves become de facto drivers of change. This places greater responsibility on professional educators as designers of professional programs to be “handmaidens” of cultural change within their wider practice group, and to ensure the appropriate preparation of newly graduated, comparatively junior professionals. As Derven (2014) argues, “good practice” in the promotion of inclusion of diverse groups within professions requires the ongoing professional development of all employees. It is not only today’s graduates who should be expected to be able lifelong learners.

Intended curriculum enhancements driven by normative societal shifts and subsequent responses by professional bodies may also meet with short or long-term resistance at the teaching coalface. This mirrors broader patterns of resistance to change in society but presents an additional, contextual challenge to the developers of quality professional curricula. O’Meara and MacDonald reflect on the impact of this coalface resistance for their teaching graduates:

A program that aims to perpetuate a grand past narrative into the future aims to construct a ‘retrospective pedagogic identity’ of the institution or program. Such a program chooses not to respond to present changes, at the expense of their pre-service teachers career needs. (2004, p. 114)

At its most extreme, program quality enhancement that requires the inclusion of diverse groups in the professions may require significant changes in personal and professional epistemologies. The work of Gorman, Padrò and Press in their chapter critically examines the doctoral supervision of Australian Aboriginal and Indigenous students in Health-related fields. Their particular focus is the relationship between the supervisor and the supervisee as a site for reinforcing cultural and epistemological hegemony. They argue that for Aboriginal and Torres Strait Islander doctoral students, the Western research paradigm can be at odds with their cultural values and ways of knowing. They claim that uncritical acceptance of the supremacy of Western ways of knowing combined with the potential power imbalances inherent in the doctoral relationship present a significant barrier to Indigenous student completion of higher degrees. Such cultural considerations form the backdrop to the provision of

quality postgraduate education in the health professions, which require consideration of social justice issues, such as improving the status of Indigenous peoples, not just through the preparation of Indigenous clinicians but also by ensuring that supervisors develop greater knowledge of Indigenous culture and Indigenous epistemologies.

The particular agendas of higher education themselves may also influence the direction of professional education, including the way professional curricula are designed and taught. This can range from the requirement to incorporate a particular strategic focus into the program syllabus, to wider institutional initiatives focused on broad-scale, curriculum renewal, such as the adoption and implementation of a new graduate attributes policy (Hurlimann, March, & Robins, 2013). The latter was the case for two case studies examined here: desired institutional graduate outcomes were used by curriculum teams to drive curricular renewal within professional programs. For the Health promotion program at the University of the Sunshine Coast (USC), the trigger for curriculum renewal was the introduction of a new graduate attributes statement. According to Taylor, Ashford, Readman and Shelley, assuring alignment of the Program with USC graduate attributes was leveraged to simultaneously focus on the development of students' professional competencies. Similarly, Marrington et al.'s chapter and its discussion of the WIL program for Psychology reveals that institutional graduate attributes were used as *de facto* outcomes for the curriculum design process. The work of these authors shows that institutional aims create additional contextual considerations educators must factor in as part of the quality enhancement of professional curricula.

Conclusion

Achieving quality graduate outcomes for university students in general is a far from straightforward process. University educators must navigate a range of complex thinking and practice to develop learning experiences for their students that are fit for purpose. Yet conceptual, social, political economic and cultural complexities inherent in this type of process rarely feature in accounts of curriculum renewal and enhancement within the

professions. Most higher education accounts tell us little about disagreements over the meaning of particular concepts, such as graduate attributes or employability skills, which educators and other stakeholders apply in definitions of key professional learning outcomes. Accounts about achieving quality professional education experiences rarely provide sufficient guidance for teachers tasked with enacting curriculum change to interpret and assure such outcomes. I have argued in this chapter that assuring curriculum quality in the professions is a multi-layered process, which is shaped by a range of contextual factors, including negotiations between stakeholders about the meaning, and purpose of professional education, restricted government and university budgets, and shifting societal and professional expectations related to cultural inclusiveness, amongst other factors. The successful initiatives shared by the authors in this first of two volumes that provide case studies of quality practice in higher education need to be seen in the light of these requirements, and are all the more remarkable for having navigated them.

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