



Academic–industry integration in health: enhancing postgraduate professional learning

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Lead institution: Queensland University of Technology

Partner institutions: Griffith University, Royal Brisbane and Women’s Hospital and the Princess Alexandra Hospital

Project leaders:

Associate Professor Karen Theobald

Director of Academic Programs, Emergency Nursing Study Area Coordinator, School of Nursing, Member, Institute of Health and Biomedical Innovation, Queensland University of Technology

Professor Alexandra McCarthy

Head of School of Nursing, University of Auckland (formerly Chair of Cancer Nursing, Queensland University of Technology and Princess Alexandra Hospital)

Project team members:

Professor Amanda Henderson

Nursing Director, Metro South Hospital and Health Service & School of Nursing & Midwifery, Griffith University

Professor Fiona Coyer

School of Nursing, Member, Institute of Health and Biomedical Innovation, Queensland University of Technology

Professor Ramon Shaban

Clinical Chair of Infection Prevention and Control, Gold Coast Hospital and Health Service & School of Nursing and Midwifery, Griffith University

Adjunct Associate Professor Robyn Fox

Director, Nursing and Midwifery Education, Metro North Hospital and Health Service & Queensland University of Technology

Ms Bernadette Thomson

Acting Nursing Director Education, Princess Alexandra Hospital & QEII Jubilee Hospital

<https://www.qut.edu.au>



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Learning and Teaching Support
Student Information and Learning Branch
Higher Education Group
Department of Education and Training

GPO Box 9880
Location code C50MA7
CANBERRA ACT 2601

<learningandteaching@education.gov.au>

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Dr Darren Apps, *Acting Clinical Nurse Consultant & Clinical Lecturer, Emergency Department, Redcliffe Hospital & Queensland University of Technology*

Ms Candice Bauer, *Registered Nurse, Emergency Department, Bundaberg Hospital*

Alison Bell, *Clinical Nurse Consultant, Department of Emergency Medicine, Metro North Hospital and Health Service*

Ms Sally Biggers, *Clinical Nurse, Emergency and Trauma Centre, Royal Brisbane and Women's Hospital*

Dr Pauline Calleja, *Program Director, Emergency Nursing, School of Nursing and Midwifery, Griffith University*

Ms Tianna Camilleri, *Registered Nurse, Emergency Department, Queensland Health*

Ms Jane Campbell, *Acting Nurse Educator, Princess Alexandra Hospital*

Veronica Casey, *Executive Director of Nursing, Princess Alexandra Hospital*

Ms Tamara Casperson, *Registered Nurse, Emergency Department, Queensland Health*

Ms Emily Cooper, *Nurse Educator, Emergency Department, Princess Alexandra Hospital*

Associate Professor Julia Crilly, *Associate Professor, Emergency Care, Griffith University & Department of Emergency Medicine, Gold Coast Hospital and Health Service*

Dr Amanda Fox, *Postgraduate Coordinator, School of Nursing, Queensland University of Technology*

Ms Jama Ganya, *Registered Nurse, Emergency Department, Queensland Health*

Professor Glenn Gardner, *Professor, School of Nursing, Queensland University of Technology*

Associate Professor Alanna Geary, *Executive Director Nursing and Midwifery Services, Metro North Hospital and Health Service*

Mc Cecilia Geddes, *Registered Nurse, Emergency Department, Queensland Health*

Ms Kerri Gillespie, *Research Manager, Queensland University of Technology & Griffith University*

Ms Zoe Griffin, *Registered Nurse, Emergency Department, Royal Brisbane and Women's Hospital*

Ms Belinda Henderson, *Clinical Nurse Consultant, Infection Control Unit, Princess Alexandra Hospital*

Julie Humphries, *Nurse Educator, Nursing Practice Development Unit, QEII Jubilee Hospital, Metro South Hospital and Health Service*

Dr Leanne Jack, *Postgraduate Study Area Coordinator, Intensive Care Nursing, School of Nursing, Queensland University of Technology*

Ms Kimberly Jackson, *Clinical Nurse Consultant, Emergency Department, Princess Alexandra Hospital*

Ms Carol Jeffers, *Acting Assistant Nursing Director, Emergency and Trauma Centre, Royal Brisbane and Women's Hospital*

Dr Margaret Kettle, *Senior Lecturer in TESOL, Faculty of Education, Queensland University of Technology*

Ms Lisa Lucas, *Acting Nurse Educator, Emergency Department, Logan Hospital*

Dr Deborah Macbeth, *Associate Director of Nursing, Infection Control, Gold Coast University Hospital*

Lorelle Malyon, *Nurse Educator, Emergency Department, Lady Cilento Children's Hospital*

Professor Robyn Nash, *Faculty of Health, Queensland University of Technology*

Jaimee Nixon, *Registered Nurse, Queensland Health*

Ms Debra Nizette, *Director of Nursing, Office of the Chief Nursing and Midwifery Officer, Department of Health*

Ms Catherine Ruff, *Nurse Educator, Emergency Department, The Prince Charles Hospital*

Ms Jessica Scaife, *Nurse Educator, Division of Cancer Services, Princess Alexandra Hospital*

Mr Jesse Spurr, *Nurse Educator, Emergency Department, Redcliffe Hospital*

Ms Jo Timms, *Nurse Practitioner Emergency Department, Gold Coast University Hospital*

Ms Leeanne Trenning, *Nurse Educator, Education Support Team, Retrieval Services Queensland*

Amanda Vaux, *Acting Nurse Unit Manager, Emergency Department, Princess Alexandra Hospital*

Ms Emma Versluis, *Clinical Nurse Consultant, Metro South Hospital and Health Service, Queensland Health*

Ms Claire Ward, *Registered Nurse, Emergency Department, Princess Alexandra Hospital*

Dr Peta-Anne Zimmerman, *Lecturer/Course Convenor, Griffith Graduate Infection Control Program, Griffith University*

List of acronyms used

AQF Australian Qualifications Framework

Executive summary

Nursing, paramedicine and allied health are significant players in clinical–academic settings, at the postgraduate level. Health systems depend on specialised disciplinary contribution and high-functioning, team-based approaches to patient care. In health contexts, the aim of postgraduate professional learning is to enable a clinically-educated and research-literate workforce to translate evidence into practice within regulatory frameworks and organisational expectations (Dzau et al., 2013). Billett’s Australian Learning and Teaching Council Fellowship work emphasises that, when it is well-designed and delivered, work-integrated education contributes enormously to students’ professional learning (Billett, 2007). Professional learning in this respect relies on the development of capabilities through teaching and learning experiences that integrate academic, discipline-specific and industry-referenced knowledge, skills and attitudes (Papadopoulos et al., 2011).

Health services and faculties invest significant resources into their respective postgraduate curricula. These curricula range from practical to intensely theoretical, and from short professional development modules to Australian Qualifications Framework (AQF)-compliant units and programs. This current approach often results in duplication of both curricula and resource investment in the health and higher education sectors (Dzau et al., 2013).

This project recognised that, although industry and universities bring complementary knowledge and skills to curriculum development, each is driven by different organisational imperatives, resulting in divergent goals and approaches for curricula and different metrics to capture educational outputs (Dzau et al., 2013).

In developing the shared culture of curriculum development advocated in this project, the universities and health services that deliver postgraduate education worked in a co-design partnership, striving for relevance, efficiency and agility to develop a mutually agreed framework for professional learning.

Aims

The aims of this project were to (1) develop an industry–academic postgraduate education framework that integrated the imperatives of higher education and the health industry while maximising postgraduate students’ professional learning; (2) develop, using this framework mutually agreed curriculum content, teaching and assessment strategies to meet the needs of students, industry and higher education in the postgraduate specialty of emergency nursing; and (3) disseminate the project outcomes to key academic, industry stakeholders and other potential adopters through a national conference presentation and publication in high-impact journals.

Project approach

The project was conducted in two phases. In phase 1, three one-day workshops were undertaken with key clinical–academic stakeholders (e.g. representatives of specialty study areas, the Office of the Chief Nursing and Midwifery Officer (Queensland), partner university

learning and teaching units, professional organisations, past and present students) to explore the principles and processes relevant to the draft framework. Phase 2 contextualised the outcomes and finalised project deliverables.

Phase 1

Workshop 1 determined the agreed evidence for the framework pertaining to:

- regulatory imperatives (e.g. Tertiary Education Quality Standards Agency and AQF issues, mandatory professional competency and registration requirements, actual and emergent imperatives in healthcare delivery)
- good practice principles of professional learning (i.e. industry referencing, creating and sustaining relationships, resourcing of industry engagement, industry understanding of student learning, curriculum currency, integrated curriculum and self-directed learning; Papadopoulos et al., 2005).
- types of professional learning (e.g. industry case study, industry simulation, industry mentoring, industry placement; Papadopoulos et al., 2005)
- agreed terms of engagement of stakeholders and partners (e.g. who should be involved in the clinical learning agenda; how to identify and resolve clinical, academic and regulatory issues, enablers and barriers to engagement; the timing and format of joint communications; and enacting distributed leadership)
- consideration of the Threshold Learning Outcomes for Health, and how these frame and drive curricula.

Workshop 2 produced agreed matrices that map the Threshold Learning Outcomes for Health in terms of:

- teaching approaches (i.e. information transmission, concept acquisition, concept development, concept change; Papadopoulos et al., 2005)
- contexts of learning (e.g. acute or community settings, internships; Papadopoulos et al., 2005)
- how best to mutually evidence and assure learning (Krause et al., 2014)
- processes for inter-institutional review and moderation of curricula (Krause et al., 2014).

Workshop 3 finalised the prototype clinical–academic integration strategy, ready for phase 2. By the end of phase 1, all workshops were delivered and the framework finalised.

Phase 2

This phase advanced the outcomes of phase 1 by way of additional team meetings, and student interviews and focus groups. The purpose of these were to discuss ideas and gain insight into current education strategies, as well as to develop the prototype clinical–academic integration strategy and associated exemplar nursing unit outlines conceptualised in phase 1.

Project outputs

The outcomes of this project include:

- a co-created, transferable framework of guiding principles and processes to enhance industry-academic curriculum development. ([Appendix D](#)) The framework is cognisant of the regulatory imperatives of stakeholders; outlines the good practice principles and types of professional learning; and articulates the terms of partner engagement, including the enactment of distributed leadership (Papadopoulos et al., 2005)
- a series of guiding principles to underpin the design of curricula
- anticipated enhancement of postgraduate students' employability and their professional learning experiences through the use of a consistent approach to academic and industry co-creation of curricula to avoid duplication and gaps, whilst maximising the resources of stakeholders and adhering to discipline-specific and regulatory requirements.
- establishment of five guiding principles of postgraduate curriculum transformation for university–industry co-creation
- Relevant postgraduate assessment and teaching approaches for university and clinical settings incorporating past and present student input
- an ISBN-listed report detailing the results of the project, including an evaluation of the processes, outputs and impacts of the project
- three conference presentations – 1. 'Co-creating an industry-academic postgraduate professional education framework' (Theobald, K. Henderson, A. Thomson, B & Humphries, J.), symposium presented at the Assessment and Review Summit conference, Pullman Melbourne on the Park, Melbourne 19-20 September 2017. 2. 'Leading through the co-creation of an industry-academic postgraduate professional education framework' (Theobald, K. & Henderson, A., Coyer, F., Fox, R., Thomson, B. & McCarthy, A.), oral presentation presented at Metro North Hospitals and Health Service Nursing and Midwifery conference – Leadership: A Voice at all Levels, March 1, 2018, The Brisbane Convention and Exhibition Centre, Southbank. 3. 'Co-creating curricula to advance the capability of post-graduate nurses: Re-imagining the contribution of academia, industry and the student' (Thomson, B., Theobald, K., Henderson, A., Coyer, F., Fox, R. & McCarthy, A.), oral presentation presented at National Nurse Education Conference, May 1-4, 2018, The Crowne Promenade, Melbourne.

Impact of the project (outcomes to date and projected future impact)

IMPEL model aspect	Project completion	6–12 months post-completion
Team members	Relationships built; partnerships created; networks established through face-to-face meetings that promoted knowledge and support regarding use of the framework	Knowledge and trial adoption of the framework to broader areas across health through team members' networks Reporting and publishing results of outcomes following local adoption, recognition and career advancement
Students	Student participation in development of emergency nursing curriculum	Greater student employability through relevance of capabilities to workplace needs, when framework is used to develop and deliver emergency nursing and other curricula at Queensland University of Technology and Griffith University, and other areas.
Communication	Presentation of the framework at university teaching and learning seminars, and workshops to colleagues, including academics, industry	Publication of discussion paper. Framework made available to networks of workshop participants through discipline-based groups (where appropriate, through access to their websites)
Adoption	Team members champion local initiatives to develop curricula	Purposeful engagement with local relevant course co- and team members who act as catalysts for change through demonstration of relevance and utility Obtaining feedback to inform future grant and modifications (where appropriate) to the framework

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Chapter 1: Project context

Nursing is a significant player in clinical–academic settings, particularly at the postgraduate level. Health systems depend on specialised nursing contribution and high-functioning, team-based approaches to patient care. In health contexts, the aim of postgraduate professional learning is to enable clinically educated and research-literate nurses to translate evidence into practice within regulatory frameworks and organisational expectations (Dzau et al., 2013). Billett’s Australian Learning and Teaching Council Fellowship work emphasises that, when it is well-designed and delivered, work-integrated education contributes enormously to students’ professional learning (Billett, 2007). Professional learning in this respect relies on the development of advanced nursing capabilities through teaching and learning experiences that integrate academic, discipline-specific and industry-referenced knowledge, skills and attitudes (Papadopoulos et al., 2011).

Hospitals and health faculties invest significant but separate resources into their respective postgraduate nursing curricula. These curricula range from purely practical to intensely theoretical, and from short continuing professional development modules to Australian Qualifications Framework (AQF)-compliant units and programs. This current approach often results in the duplication of both curricula and resource investment in the health and higher education sectors (Dzau et al., 2013).

This project recognised that, although industry and universities bring complementary knowledge and skills to nursing curriculum development, each is driven by different organisational imperatives, resulting in divergent goals and approaches for curricula and different metrics to capture educational outputs (Dzau et al., 2013). For example, industry places more emphasis on practical capabilities as measured by patient satisfaction ratings, whilst academic health disciplines are more cognisant of the theoretical scaffolding of learning that reflects AQF compliance. Feedback from students who have completed hospital or university offerings, however, suggests that some courses do not meet the precise requirements of the nursing credentialing body or industry mandates, for example in terms of content specialisation or AQF level, and have not advanced their employability (Lee & Metcalf, 2009).

In developing the shared culture of curriculum development, the universities and health services that deliver postgraduate nursing education can strive for relevance, efficiency and agility in their mutual mission of professional learning.

This project addressed the Office for Learning and Teaching’s ‘employability skills’ priority area by building collaborative relationships between employer, industry and professional bodies in health. It explored strategies for nursing curriculum design and assessment that produce work-ready postgraduates who benefit from a judicious blend of practical and academic learning experiences, clarified the role of higher education institutions in preparing nursing graduates for future employment, and investigated how to embed these ideas within curricula. The project was an innovative response to identified need, the first time in health such an agenda has been attempted in postgraduate, non-medical health disciplines.

The climate of readiness to progress the alignment agenda for the benefit of postgraduate students, in nursing in particular, is reinforced by pay incentives. Recent legislation Academic–industry integration in health

recommends that it is highly desirable for nurses to obtain a suitable postgraduate qualification at AQF levels 8–9, commensurate to the context of practice and in line with the nurse’s role and responsibilities (Metro North Hospital and Health Service, 2017; Nurses and Midwives Award, 2015; Nursing and Midwifery Office, 2014). It is therefore timely and valuable for industry and the academy to renegotiate the scope and aims of their current curricula, and to develop mutual policies and processes to ensure the professional learning of postgraduate students is relevant to rapidly changing industry needs and consistent with policy, regulatory and organisational mandates.

The project is particularly congruent with the vision of the home institution (Queensland University of Technology), which is to embed work-integrated learning and assessment experiences into all courses, enabling learners to develop deep professional knowledge and to advance their professional profile and employability. Queensland University of Technology’s Real World Learning 2020 vision also emphasises the university’s support and reward of cross-boundary collaborations within and beyond Queensland University of Technology in the pursuit of curriculum excellence. The two universities and the two major health districts who partnered in this project are committed to the development and delivery of work-integrated postgraduate education in nursing and allied health. Collaborating institutions (Queensland University of Technology, Griffith University, Metro South and Metro North hospital and health service districts) have supported numerous Office for Learning and Teaching/Australian Learning and Teaching Council projects that focus on work-integrated learning in undergraduate nursing, with the experience and orientation of the respective universities and health service partners, providing a team and a curriculum context that was ready to lead and embed this project.

This project has developed a robust and coherent approach to guide postgraduate curricula that maximises enablers and minimises barriers to industry and university collaboration. This formal alliance of the clinical–academic enterprise in nursing and other health disciplines should enable the delivery of a focused, compelling, collaborative, unified and mutually accountable program of postgraduate professional learning (Dzau et al., 2013; Ovseiko et al., 2014; Kirch et al., 2005). Given the readiness for health service and educational reform in nursing, paramedicine and allied health; the identified need for systemic change in the sector advocated by health legislation and policy; the potentially integral role of postgraduate health students in this reform; and the volume of practitioners who enrol in postgraduate study – for example, between them Queensland University of Technology and Griffith have 1500 postgraduate coursework nursing students – it is timely to consider how the postgraduate clinical–academic nexus can be enhanced.

There are several imperatives underpinning this project. The most significant is underlined by the McKeon report of 2013, which highlighted the advantages of reconciling clinical–academic differences and strengthening alignments in health in Australia (McKeon, 2013). The McKeon report concentrated on the nexus of medicine and postgraduate research under the rubric of academic health centres, which are accredited, degree-granting partnerships usually comprising an undergraduate medical school operating in a formalised relationship with a clinical environment (Wartman, 2007). Although the academic health centre agenda has not substantially progressed in Australia, particularly in non-medical health fields (Henderson & Creedy, 2008), McKeon’s ideas are germane to postgraduate coursework in

nursing, paramedicine and other allied health disciplines. Given the contribution of non-medical health professionals to the health system in Australia – for example nursing comprises 52% of the health workforce – this project constitutes a timely actioning of the McKeon agenda with respect to strengthening the nexus between industry and higher education to advance postgraduate learning and employability.

There is also some criticism of the recent trend in universities towards more generic postgraduate course offerings (Lee & Metcalf, 2009), a result of the pressure to reduce the number of unprofitable niche postgraduate courses. Unfortunately this can result in a ‘one size fits all’ approach that industry and students increasingly indicate does not meet their specialist or credentialing needs (Lee & Metcalf, 2009). Alignment of the industry–academic agenda in this project has potential to increase the relevance of postgraduate specialist courses in health and thereby increase enrolments.

In addition, university schools of health engage with course advisory committees drawn from key industry stakeholders (defined as health organisations, professional bodies and student cohorts) for all AQF-compliant curricula. Hospitals may similarly seek university advice for alignment of their continuing education offerings with AQF Level 8 programs. However, feedback or advice in both instances is generally sought ‘after the fact’, when courses are already developed; research indicates that superior learning experiences for students result from the negotiation at the outset of clinical content, context and teaching approaches (Henderson & Creedy, 2008).

The aims of this project were to (1) develop an industry–academic postgraduate education framework that integrated the imperatives of higher education and the health industry while maximising postgraduate students’ professional learning; (2) use this framework to develop mutually agreed curriculum content, teaching and assessment strategies to meet the needs of students, industry, and higher education in the postgraduate specialty of emergency nursing; and (3) disseminate the project outcomes to key academic, industry stakeholders and other potential adopters through a national conference presentation and publication in high-impact journals.

The objectives were to:

- mutually develop an industry–academic postgraduate education framework that integrates the imperatives of higher education and the health industry to maximise postgraduate students’ professional learning. For this objective, the research has:
 - reviewed the enablers and impediments to industry–academic integration
 - defined the terms of postgraduate industry–academic engagement
 - developed a typology of the content of professional learning (with exemplars)
 - created a matrix of potential teaching, learning and assessment approaches.
- develop, using the framework, mutually agreed curriculum content, teaching and assessment strategies that meet the needs of students, industry and higher education in the postgraduate specialty of emergency nursing
- broadly disseminate the project outcomes to key academic and industry stakeholders and to other potential adopters.

Chapter 2: Project approach

Methodology

The project was informed by the learning circle approach, which is a variant of participatory action research. Learning circles acknowledge that while the diverse agents within an educational network have a wealth of priorities, they also have a wealth of knowledge plus the capacity to effect necessary change (Walker et al., 2011). Stakeholders bring different expertise and contextual know-how to curriculum development and delivery, and all of their contributions are considered to be leadership capacities that are vital to educational outcomes. The learning circle approach therefore aims to effect systemic and sustainable change by distributing educational leadership amongst stakeholders (Walker et al., 2011).

Design

The project was conducted in two phases. In phase 1, three one-day workshops (18 hours in total) were undertaken with key clinical–academic stakeholders (e.g. representatives of specialty study areas, the Office of the Chief Nursing and Midwifery Officer (Queensland), partner university learning and teaching units, professional organisations, past students) to explore the principles and processes relevant to the draft framework. Workshops were undertaken in June and December 2016, and May 2017, supplemented with iterative between-workshop email and personal consultation with participants. Twenty-one participants were recruited from professional associations, including the College of Emergency Nursing Australasia national and state branches, Australian College of Critical Care Nursing, Cancer Nurses Society of Australia, the Office of the Chief Nursing and Midwifery Officer Queensland, postgraduate past students, and experts drawn from the networks of the investigators.

Phase 2 advanced the outcomes of phase 1 with additional team meetings, and student interviews and focus groups. The purpose was to discuss ideas and gain insight into current education strategies, as well as to develop the prototype clinical–academic integration strategy and associated exemplar nursing unit outlines conceptualised during phase 1.

Consistent with the learning circle approach, in the workshops and follow-up consultations the project explored the working interface between the participating students, College of Emergency Nursing Australasia, regulatory bodies, universities and health services, which traditionally have separate (but not mutually exclusive) educational goals and tend to operate under separate (but not mutually exclusive) norms and performance indicators. Each workshop was led by one principal investigator, while the other investigators embedded within groups of participants to help structure activities and summarise group outputs. The workshops systematically explored topics such as the enablers and impediments to industry–academic joint development and delivery of postgraduate curricula; the terms of postgraduate industry–academic engagement; the mandatory content of postgraduate emergency nursing curricula; and relevant teaching, learning, assessment and quality

assurance approaches. A design outlining the milestones for curriculum development and implementation (Figure 1) was developed and transformed over the course of phase 1.

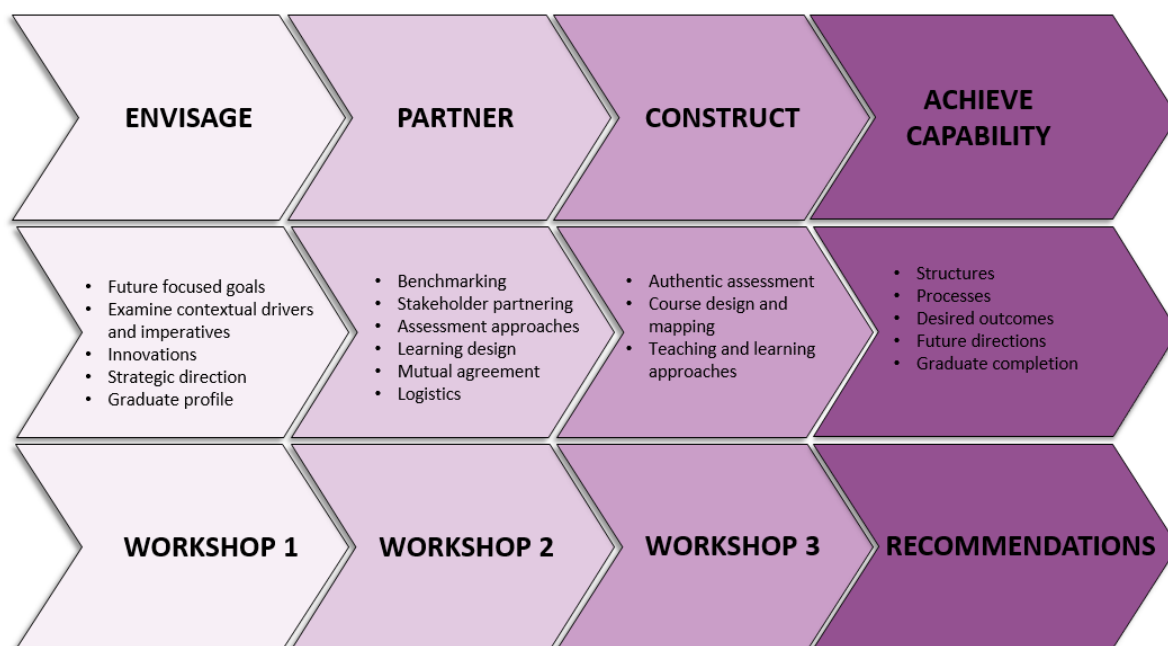


Figure 1: Milestones for curriculum development and evaluation.¹

The project was approved by the human research ethics committees of the two participating universities and the relevant health services of the project partners.

Participants

Participants included members of the executive and representatives of College of Emergency Nursing Australasia; university-based curriculum experts, emergency nursing course coordinators and past and present postgraduate curriculum directors from the two partner universities; past and present postgraduate students of the two partner universities; emergency nursing educators and clinicians from six metropolitan hospitals in Brisbane; the Directors of Nursing and Directors of Nursing Education from the partner health services; and one credentialing expert from the Office of the Chief Nursing and Midwifery Officer, Queensland. The number of participants able to attend all or part of each workshop, which was influenced by clinical demands at the time, ranged from 9 to 21.

Data collection

Data collection activities included classic learning circle techniques such as ice-breaking sessions, small and large group brainstorming, group conceptualisation and thematising using field notes, sticky notes and exemplars. With the agreement of the participants, the written outputs of the group work, such as mind maps, were retained, and intensive field noting of verbal outputs was undertaken by the principal investigator during each workshop. Other

¹ Adapted from Queensland University of Technology. *Re/accreditation pathway: review and approval milestones*. 2017. <https://qutvirtual4.qut.edu.au/group/staff/teaching/course-and-unit-design/framework>. Accessed 4 May 2017.

research team members made field notes while facilitating break-out groups and also provided group-approved summaries of key points, which were included in the analysis. Due to the highly interactive nature of the workshops and the number of participants, it was not useful to audio-record the proceedings.

Data analysis

Iterative coding (a form of thematic analysis involving repeated addition, reflection and development of findings) distilled the data into themes and ideas, which were assessed and redrafted into principles and strategies. These encompass the principles and processes that must be considered when developing and delivering high quality emergency nursing curricula that can harness the diverse contexts of learning and assure course quality. These include the good practice principles of professional learning, stakeholder terms of engagement, scaffolding of teaching and learning, and a university–industry academic framework. On completion of the workshops, the data were systematically collated and analysed into categories by the investigators to form a draft framework. In an iterative process, the collated and categorised data were provided to participants for review and feedback. By the third iteration, no further modification of the analytical findings and themes within the framework was suggested by participants.

Workshops

Workshop 1

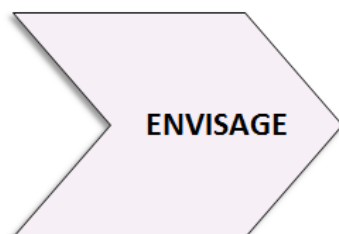


Figure 2: First milestone for curriculum development and evaluation.

Workshop 1 was held at the Translational Research Institute, Woolloongabba, Queensland on 12 July 2016. Twenty-one people associated with Queensland clinical nursing and education attended this workshop, including Executive Directors of Nursing from Metro South and North, and a representative from the Office of the Chief Nursing and Midwifery Officer

Table 1: Workshop 1 outline

Speaker 1: Alannah Geary (Executive Director of Nursing, Metro North)	Aims of a postgraduate course Discussion: What are the generic attributes of the postgraduate nurse?
Speaker 2: Veronica Casey (Executive Director of Nursing, Metro South)	Discussion: What behaviours do nurses need to demonstrate in order to function safely and competently in a specialty?
Speaker 3: Debra Nizette (Office Chief Nursing & Midwifery Officer, credentialing and specialisation)	Mapping the postgraduate education pathway Discussion: What evidence needs to be collected to demonstrate that the learning outcomes have been met?
Speaker 4: Margaret Kettle (Queensland University of Technology)	Principles of a good curriculum Discussion: The elephant in the room: Why isn't this happening now?
Speaker 5: Robyn Nash (Queensland University of Technology)	Australian Qualifications Framework – an overview
Closing	Making it happen – Where to from here? Your continuing involvement?

Objectives

- Review the enablers and impediments to industry–academic integration.
- Determine the agreed evidence for the framework pertaining to:

Academic–industry integration in health

- regulatory imperatives (e.g. AQF issues, mandatory professional competency and registration requirements, actual and emergent imperatives in health care delivery)
- good practice principles of professional learning (i.e. industry referencing, creating and sustaining relationships, resourcing of industry engagement, industry understanding of student learning, curriculum currency, integrated curriculum and self-directed learning; Papadopoulos et al., 2005)
- types of professional learning (e.g. industry case study, industry simulation, industry mentoring, industry placement; Papadopoulos et al., 2005)
- agreed terms of engagement of stakeholders and partners (e.g. who should be involved in the clinical learning agenda; how to identify and resolve clinical, academic and regulatory issues, enablers and barriers to engagement; the timing and format of joint communications; enacting distributed leadership)
- the Threshold Learning Outcomes for Health (O’Keefe et al., 2014), and how these frame and drive curricula.

Deliverables

Barriers and enablers

Participants readily identified the competing pressures driving curricula, and how difficult these pressures are for all stakeholders to understand and reconcile. These pressures include:

- universities’ requirement for courses to meet AQF standards
- competencies and standards considered mandatory by health services and their emergency departments, College of Emergency Nursing Australasia and the Nursing and Midwifery Board of Australia
- actual and potential developments in health care such as the recent uptake of integrated electronic medical records in some Queensland facilities, which also drive curricula, and need to be carefully considered when determining curriculum content.

Enablers included the environment of industry–academic learning. Access to a wide array of experienced clinicians and academics was deemed beneficial.

An initial set of guiding principles underpinning curricula (later refined) were developed after the first workshop:

- mutual understanding of the goal postgraduate attributes. The key question should always be: what sort of postgraduate do we want to produce?
- clear articulation of mutual curriculum values via a conceptual model of nursing practice, such as the Strong model (Ackerman et al., 1996)
- equal industry and academic referencing
- respectful relationships between industry and academe, which has mutual mentoring and capacity-building processes embedded to establish a sustainable teaching and learning community of practice

- distributed leadership with mutually determined, well-articulated, fit-for-purpose roles for each person. A 'consortium' approach is ideal
- industry engagement in academic activity that is adequately resourced in human and material terms to ensure robust curriculum development and delivery
- mutual articulation and understanding of student, organisational and professional needs
- mutual understanding of entry and exit requirements
- robust evidence
- explicit relationships between, and integration of, all course content and strategies
- viable inter-institutional methods of assuring learning and teaching standards
- evaluation underpinned by mutually relevant metrics
- curricula that are jointly developed and delivered by health services and universities are informed by a viable, mutually acceptable business model
- built-in accountability for implementing agreed actions
- flexible and seamless articulation process for students between health service and university courses, with clearly articulated processes.

Agreed terms of industry–academic engagement in course development

- who will be involved in the clinical learning agenda (students, industry representatives, academics, consumers), and how will this be determined
- extent and mode of their involvement
- methods to identify and resolve clinical, academic and regulatory issues determined
- articulation and actioning of enablers to engagement
- articulation of and solution to barriers to engagement
- timing and format of joint communications
- how distributed leadership will be enacted.

Findings from this workshop fed into a set of matrices describing the synchronisation of professional and regulatory imperatives for postgraduate coursework in nursing. ([Appendix B](#))

Workshop 2

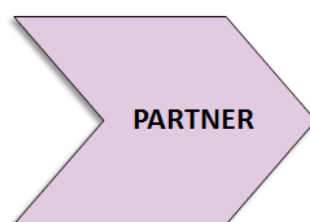


Figure 3: Second milestone for curriculum development and evaluation.

Workshop 2 was held at the School of Nursing, Queensland University of Technology, on 2 December 2016. Sixteen nurse-educators, clinicians and lecturers attended.

Table 2: Workshop 2 outline

Speaker 1: Professor Glenn Gardner (Queensland University of Technology)	Identifying advanced practice in the nursing workforce
Speaker 2: Adjunct Professor Robyn Fox (Royal Brisbane and Women’s Hospital)	Career pathways a mechanism to support achievement of role expectations: <ul style="list-style-type: none"> • Review of nursing classification expectations • Overview of how a career pathway can be used as mechanism for career, professional and academic choices
Speaker 3: Dr Karen Theobald (Queensland University of Technology)	Industry–academic partner engagement: <ul style="list-style-type: none"> • What are the key roles of industry and universities in the partnership? • How will the partnership be resourced to jointly develop and deliver curricula? What is needed for joint delivery – commercial business model? • How will the partnership ensure continued curriculum currency and relevance? • How do we ensure robust back-mapping from AQF practice, knowledge and skills to the graduate we want to produce?
Closing	Where to from here?

Objectives

Produce agreed matrices that map the Threshold Learning Outcomes for Health in terms of:

- teaching approaches (i.e. information transmission, concept acquisition, concept development, concept change; Papadopoulos et al., 2005)
- contexts of learning (e.g. acute or community settings, internships; Papadopoulos et al., 2005; Papadopoulos et al., 2005)
- how best to mutually evidence and assure learning (Krause et al., 2014)
- processes for inter-institutional reviewing and moderation of curricula (Krause et al., 2014)
- overview of Draft National Advanced Practice Framework and the implications for industry–academic partnerships

- overview of Queensland Health enterprise and structure.

Deliverables

Professor Glenn Gardner articulated what a future advanced practice nursing workforce might look like. Delineation between foundation nursing, advanced practice nursing and nurse practitioner levels and profiles of practice was overviewed. This work showcased the levels, types and content of postgraduate education and how this aligns with the service requirements of these roles. This delineation informs health service planning in assigning and implementing nursing roles appropriate to service needs and patient requirements.

Teaching approaches and principles	<ul style="list-style-type: none"> • Scaffolded from information transmission, to concept acquisition (knowledge), to concept development (skills), to concept change (application) • Interdisciplinary and cross-specialisation teaching where appropriate and available • E-learning (for improved flexibility and access) requires ongoing support, development and standardisation • Involvement of professional colleges and other learning networks
Learning approaches and principles	<ul style="list-style-type: none"> • Self-directed learning • Industry placement and mentoring • E-learning for remote simulation, peer-to-peer learning and enhanced access for rural and remote students • Rotational placements
Assessment approaches and principles	<ul style="list-style-type: none"> • Clinical competency assessments and processes are consistent with the Nursing Midwifery Board of Australia position statement on assessing standards for registered nursing practice (2015) (e.g. clinical competency assessments are performance-based and undertaken in the practice context by assessors who are appropriately clinically and academically prepared) • Clinical competencies should be assessed by clinicians, theoretical assessments by academics but all jointly decided on, depending on context. • Flexibility in clinical competency assessment fundamental (e.g. viva, observation, simulation, performed via telehealth). Depends on what is available in context • Academic assessments and processes congruent with Australian Tertiary Education Quality Standards Agency imperatives • Professional curriculum development and delivery opportunities enabled for teachers, especially industry-based teachers • Standard processes implemented to ensure accurate calibration of markers and robust and transparent moderation processes across academic and industry contexts • Mutual agreement on performance expectations (e.g. what mark is a pass?)

	<ul style="list-style-type: none"> • Dilemma-based (i.e. problem-based) learning grounded in real practice problems to heighten engagement and reduce incidence of plagiarism.
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A variety of teaching and learning approaches (Table 3) that are aligned with educational outcomes and industry requirements were developed in collaboration with industry and academic partners. These tools give a blended approach to enable delivery and authentic assessment to rural and remote students. These tools ensure consistency in educational standards, stability of student support and the flexibility required for external or part-time learning. Approaches are aimed at guaranteeing optimal outcomes from resources to advance clinical skills for both on-site and off-site students through simulations, flexible delivery times and methods, and enhanced use of online education.

Table 3: Approaches to learning and teaching

Workshop 3

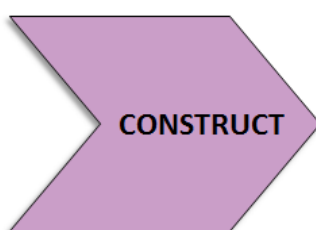


Figure 4: Third milestone for curriculum development and evaluation.

This workshop was held at the School of Nursing, Queensland University of Technology on 8 May 2017. A select group of nine key individuals participated in the third and final workshop.

Table 4: Workshop 3 outline

Update and review
Activity 1: Drawing on the outcomes of workshops 1 and 2, develop four Graduate Certificate unit exemplars.
Activity 2: Identify the strategies for the governance and key performance indicators/outcomes mutually created curricula.
Group discussion and feedback

Objectives

- Overview the objectives and deliverables of workshops 1 and 2.
- Discuss threshold learning outcomes to ensure that those for health are covered in the development of the curriculum and framework.
- Develop mutually agreed curriculum content, teaching and assessment strategies that meet the needs of students, industry and higher education in the postgraduate specialty of emergency nursing.
- Broadly disseminate the project outcomes to key academic and industry stakeholders and to other potential adopters.

Academic–industry integration in health

- Finalise the prototype clinical–academic integration strategy and have the framework finalised.

Deliverables

Four units were developed to create a prototype Graduate Certificate of Emergency Nursing. ([Appendix C](#))

This graduate certificate is a working exemplar of an AQF Level 8 postgraduate course that can be modified to suit contexts. From analysis of the collected data, a series of five guiding principles of curriculum development, implementation and evaluation were established to inform the processes used in the project (Figure 5). These five guiding principles are useful for any implementation of a co-curricular partnership.

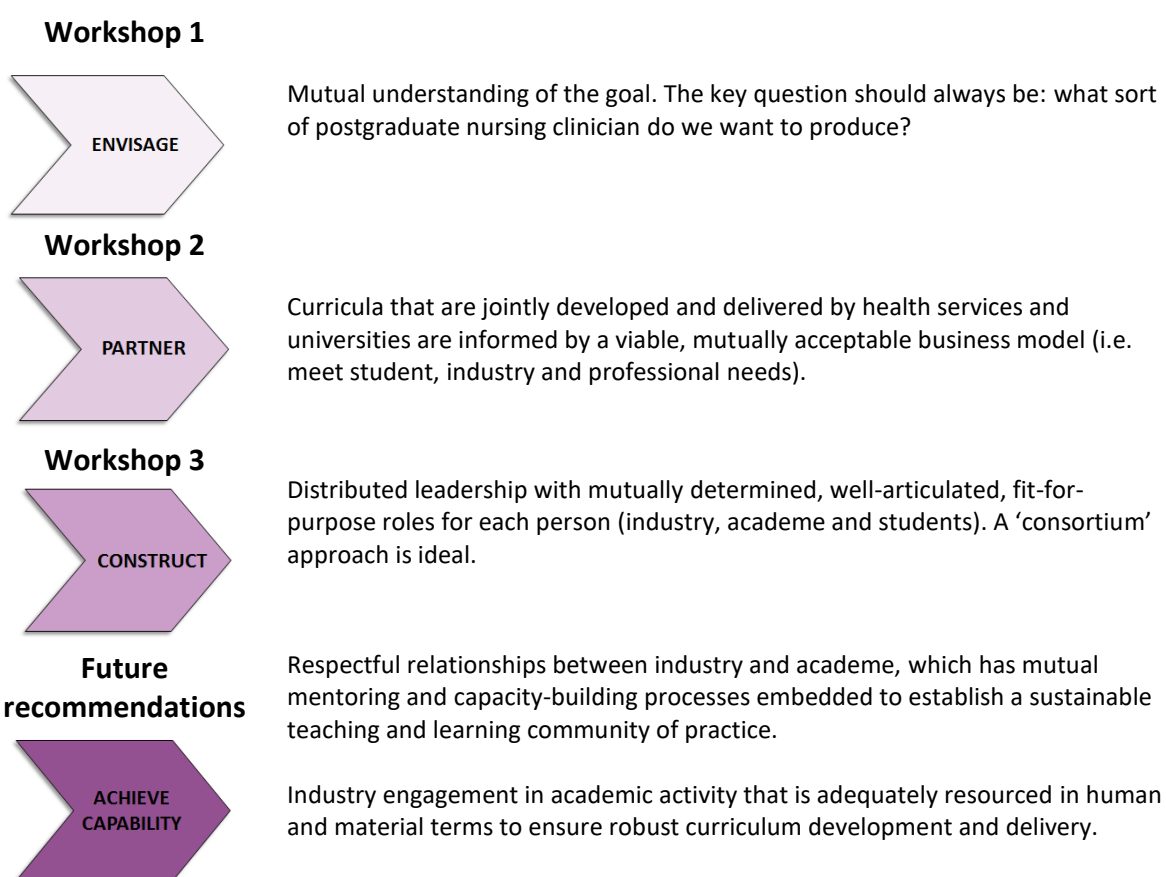


Figure 5: Guiding principles of postgraduate curriculum transformation.

Student feedback and involvement

Past students provided input into the outcomes of workshops 1 and 3.

Focus groups and interviews

Current students during May and June 2017 keenly provided feedback on materials that were developed from the three workshops. Five students from two different universities, studying both on and off campus, met with researchers in either a focus group or individually.

Academic–industry integration in health

Objectives

- Obtain student feedback on the framework developed by the research team and the Graduate Certificate exemplar units.
- Elicit student views of current units and courses.
- Explore what the student role could be in terms of curriculum creation, implementation and evaluation.

Student feedback

The most compelling issue highlighted by students was the disconnect between clinical and academic courses, standards and learning support. All students commented on the extremely structured nature, limited clinical relevance and high expectations of university units, lacking confluence with the limited guidelines and structure, and lack of dedicated facilitators at the hospital setting. The major barrier to learning mentioned by students was time. A large amount of coursework was expected to be completed in a relatively short timeframe, which was in stark contrast to the expectations of undergraduate courses, or alternative routes of postgraduate training.

Students felt that their learning may have been enhanced by improvements to teaching, such as highlighting the relevance of topics, by providing more specific examples connected to the clinical context. Recommendations by students included having a facilitator dedicated to student support. Also beneficial to students would be having a number of rotations throughout the hospital in different units to enable students to experience different clinical settings and contexts. Shadow shifts once a month could be organised by dedicated student facilitators and could be scheduled to fit with students' university subjects and assessments.

Future deliverables

- Agree on and monitor course standard and quality – university led and working in partnership with industry and students.
- Recognise more formally student commitment in the development and delivery of the course (i.e. mutual recognition that expectations have been adhered to; part of the Visualise, Create, Transform, Realise model).
- Provide an avenue for communication with clinical educators.
- Have clearer expectations for all parties; obligations and processes of student learning, commitment, and engagement are made transparent and regularly revisited.
- Appoint dedicated staff to support students and student learning activities.
- Introduce a comprehensive variety of learning contexts (e.g. department swaps and shadow shifts).
- Invite regular student feedback on units or subjects and overall course experience, shared in a positive way for quality improvement for all parties.
- Identify and appoint student advocates or student representatives on the course advisory.

Chapter 3: Project outputs and findings

The project strategies and methodology were directed by the learning circle approach, which ensured the participation of a diverse range of stakeholders to increase the likelihood of systemic change, dissemination and adoption. Iterative conception, construction and evaluation through workshops, meetings, focus groups and email exchanges fulfilled all aims and objectives outlined in the proposed project. Proactive partnerships and co-design were cultivated within the workshops by focusing on the common goals of the participants. The project aimed for reciprocal and cooperative communication processes. In each workshop, processes established a mutual identity as an educational 'community of practice' for postgraduate emergency nursing students – a community that wished to negotiate a pathway for the joint development and potential delivery of a postgraduate emergency nursing course. The project culminated in a collection of strategies and exemplars for future use in academic–industry nursing education. The workshops, working groups and regular feedback informed the iterative development of all project deliverables.

The **outcomes achieved** from the workshop activities were:

- the development of matrices describing the synchronisation of professional and regulatory imperatives for postgraduate coursework in nursing. ([Appendix B](#))
- a series of guiding principles that underpin the design of curricula (see 8 in chapter 2).
- the University–Industry Academic Framework – a framework to utilise in partnering with university and industry. ([Appendix D](#))
- mutually deliberated and agreed upon curriculum content and assessment strategies relevant for postgraduate education (**Table 3**).
- establishment of five guiding principles of postgraduate curriculum transformation for university–industry co-creation (Figure 5)
- a Graduate Certificate of Emergency Nursing exemplar course outline that can be utilised by any organisation or educational entity as an informative tool for directing the development of learning and teaching strategies and curriculum. ([Appendix B](#))
- a manuscript under review.
- three conference presentations – 1. 'Co-creating an industry-academic postgraduate professional education framework' (Theobald, K. Henderson, A. Thomson, B & Humphries, J.), symposium presented at the Assessment and Review Summit conference, Pullman Melbourne on the Park, Melbourne 19-20 September 2017. 2. 'Leading through the co-creation of an industry-academic postgraduate professional education framework' (Theobald, K. & Henderson, A., Coyer, F., Fox, R., Thomson, B. & McCarthy, A.), oral presentation presented at Metro North Hospitals and Health Service Nursing and Midwifery conference – Leadership: A Voice at all Levels, March 1, 2018, The Brisbane Convention and Exhibition Centre, Southbank. 3. 'Co-creating curricula to advance the capability of post-graduate nurses: Re-imagining the contribution of academia, industry and the student' (Thomson, B., Theobald, K., Henderson, A., Coyer, F., Fox, R. & McCarthy, A.), oral presentation presented at National Nurse Education Conference, May 1-4, 2018, The Crowne Promenade, Melbourne.

Future outcomes anticipated from this project are:

- ‘Advancing nursing contribution to health through the co-creation of an academic and industry postgraduate education framework’ (Theobald, K., Fox, R., Henderson, A., Coyer, F., Thomson, B. & McCarthy, A.), oral presentation accepted at International Council of Nursing Congress 2019, June 27 – July 1, 2019, Marina Bay Sands, Singapore.
- dissemination of the project outcomes to potential adopters and key stakeholders via seminars, forums, and presentation of findings
- publication of a manuscript describing the findings of the project and outlining suggestions for future curriculum development.

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Appendix A

Certification by Deputy Vice-Chancellor (Learning and Teaching)

I certify that all parts of the final report for this OLT grant/fellowship (remove as appropriate) provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

A handwritten signature in blue ink that reads "Derbyshire". The signature is stylized with a large, sweeping initial 'D' and a horizontal line extending to the right.

Name: Professor Suzi Derbyshire
DVC (Learning and Teaching)
Queensland University of Technology

Date: 4/ 04 / 2019

Appendix B

TABLE 1 Matrix 1: Harmonisation of professional and regulatory imperatives for postgraduate coursework nursing education with the Strong Model

Level of nursing	AQF level	National nurse standard or reference	Curriculum content	Curriculum nature	Strong Model domains (mean score per level of nursing for each Strong Model domain)				
					Direct Care	Support of Systems	Education	Research	Publication and professional leadership
Registered nurse	7	NMBA Registered Nurse Standards for Practice 2016	NMBA-legislated educational requirements	Competency-based as per NMBA standards ²	2.56	1.77	1.93	1.17	0.7
Domain-specific nurse	8	NMBA Registered Nurse Standards for Practice 2016	<ul style="list-style-type: none"> Specialty college or association standards (where these exist) Actual and emergent imperatives in specialty health care delivery articulated by industry reference groups 	Competency-based as per NMBA Standards	2.1	2.62	2.44	1.84	1.47
Advanced practice nurse	9	NMBA Fact Sheet on Advanced Practice Nursing 2013; and Identifying advanced practice: A national survey of a nursing workforce Gardner et al., 2016	<ul style="list-style-type: none"> Will vary slightly according to whether nurse is classified as 'clinical', 'consultative' or 'classical'³ advanced practice nurse Actual and emergent imperatives in health care delivery articulated by industry reference groups 	Theory-based (no NMBA standards exist)	2.74	2.75	2.64	2.17	1.96
Nurse practitioner	9	NMBA Nurse Practitioner Standards for Practice 2014	NMBA-legislated educational requirements	Theory- and competency-based as per NMBA standards	3.46	2.62	2.7	2.18	2.25

² Does not denote clinical competency assessment (i.e. skills) only – encompasses the competency domains (each with discrete knowledge, skills, application) articulated in the Nursing and Midwifery Board of Australia (NMBA) standards

³ As per - Gardner, G., et al. (2016). "Identifying advanced practice: A national survey of a nursing workforce." *International Journal of Nursing Studies* **55**(2016): 60-70. Clinical = predominant focus on advanced specialist clinical work; consultative = predominant focus on a clinical consultant role; classical = practice involving a high level of activity across five domains of nursing.

TABLE 2: Matrix 2: Mutual expectations to ensure teaching and learning quality and employability of graduates in postgraduate nursing coursework

<p>Guiding principles</p>	<p>Curricula are underpinned by:</p> <ul style="list-style-type: none"> • Mutual understanding of the goal postgraduate attributes. The key question should always be: “What sort of postgraduate do we want to produce?” • Clear articulation of mutual curriculum values via a conceptual model of nursing practice, such as the Strong Model • Equal industry and academic referencing • Respectful relationships between industry and academe, which has mutual mentoring and capacity building processes embedded to establish a sustainable teaching and learning community of practice • Distributed leadership with mutually-determined, well-articulated, fit-for-purpose roles for each person. A ‘consortium’ approach is ideal. • Industry engagement in academic activity that is adequately resourced in human and material terms to ensure robust curriculum development and delivery • Mutual articulation and understanding of student, organisational and professional needs <ul style="list-style-type: none"> • Mutual understanding of entry and exit requirements • Robust evidence • Explicit relationships between, and integration of, all course content and strategies • Viable inter-institutional methods of assuring learning and teaching standards • Evaluation underpinned by mutually-relevant metrics • Curricula that are jointly developed and delivered by health services and universities are informed by a viable, mutually-acceptable business model • Accountability for implementing agreed actions is built in • Articulation process between health service and university courses should be flexible and seamless for students, with clearly articulated processes. 						
<p>Course development</p>	<ul style="list-style-type: none"> • Agreed terms of industry-academic engagement established; e.g.: <ul style="list-style-type: none"> ○ Who will be involved in the clinical learning agenda (students, industry representatives, academics, consumers), and how will this be determined ○ Extent and mode of their involvement ○ Methods to identify and resolve clinical, academic and regulatory issues determined ○ Articulation and actioning of enablers to engagement ○ Articulation of and solution to barriers to engagement ○ Timing and format of joint communications ○ How distributed leadership will be enacted • Forward mapping: Developmental learning outcomes that take student from the known to the unknown (i.e. equivalent to knowledge→skills→application; or competence→capability) are scaffolded throughout the course, units and assessments • Back mapping: The ideal course graduate is the starting point. Backward design begins with the objectives of the course—what students are expected to learn and be able to do on graduation; it then proceeds “backward” to create learning experiences and strategies to achieve those goals • Openness to a ‘pick and mix’ or ‘shopping cart’ approach ; that is, modular approach where all modules are focused on learning outcomes, but the mix of modules is adaptable to student needs 						
<p>Course delivery</p>	<p>Course outcomes Target postgraduate capabilities as per Strong Model are articulated and woven through all</p>	<p>Content Specialty college or association-specified content that is competency-driven (AQF Level 8) Driven by discrete context of practice and explicitly underpinned by theory as</p>	<p>Contexts of learning Acute settings Community settings Policy settings Simulation lab</p>	<p>Teaching approaches Scaffolded from information transmission, to concept acquisition (knowledge), to concept development (skills), to concept change (application) All teaching strategies and assessment processes</p>	<p>Learning approaches Industry case study Clinical simulation Industry mentoring</p>	<p>Assessment principles Clinical competency assessments and processes are consistent with the NMBA position statement on assessing standards for registered nursing practice (2015); e.g., clinical competency assessments are performance-based and undertaken in the practice context by assessors who are appropriately clinically and academically prepared.</p>	<p>Assessment types Competency assessment Practice audit Create policy and practice guideline</p>

	aspects of course	well as competency (AQF Level 9) Build on resources health services and universities have already developed; e.g. advanced life support in university course assumes achievement of basic life support competency in hospital	Face-to-face (lectures, tutorials) Online (synchronous and asynchronous)	scaffold developmental learning outcomes Interdisciplinary teaching Cross-specialisation teaching (e.g. emergency nurses teach physical assessment)	Industry placement Rotational placements Developing patient plans Self-directed learning Group learning Individual learning Remote simulation	Clinical competencies should be assessed by clinicians, theoretical assessments by academics but all jointly decided on, depending on context. Flexibility in clinical competency assessment fundamental; e.g. viva, observation, simulation, performed via telehealth. Depends on what is available in context Academic assessments and processes are congruent with Australian Tertiary Education Quality Standards Agency imperatives Professional curriculum development and delivery opportunities enabled for teachers, especially industry-based teachers Standard processes implemented to ensure a) accurate calibration of markers and b) robust and transparent moderation processes across academic and industry contexts Mutual agreement on performance expectations e.g. what is a pass? Dilemma-based (i.e. problem-based) learning grounded in real practice problems heighten engagement and reduce incidence of plagiarism	Present in-service Classical essay Classical multichoice and short answer exams Portfolios of key competencies and capabilities Small or large thesis or project
Course evaluation	Processes established for: <ul style="list-style-type: none"> • Objective student evaluation • Regular and systematic inter-institutional quality assurance (benchmarking), review and moderation of curricula 						

Appendix C

Graduate Certificate of Emergency Nursing Exemplar Academic and Industry (Qld health) Partnership – Course Outline

The aim of the “Academic-industry integration in health: Enhancing postgraduate professional learning” project was to develop an industry-academic integration framework that enables the joint development of postgraduate curricula and ensures curriculum compliance with regulatory and industry requirements. In concurrence with this agenda is an exemplar Graduate Certificate, developed in harmonisation with the principles and objectives of the framework. This exemplar outlines four units that encompass the requirements of industry as well as supplying students with value-added learning and beneficial and translatable education outcomes.

UNIT 1 & 2: Advancing Clinical Practice I & II (24 credit points)

Synopsis:

This unit has a strong clinical focus, introducing students to advanced clinical concepts required to manage patients in the emergency care setting. The course will focus on the underlying physiology and pathophysiology of illness; assessment; treatment; and management of patients, relating and integrating theoretical knowledge with practical patient care. This unit will develop specialist level skills and knowledge in advanced clinical health assessment over two semesters (12 months).

Aims:

The aim of this unit is to develop advanced competencies in higher order diagnostic clinical decision-making, clinical reasoning, and patient care issues.

Learning outcomes:

Successful completion of this unit requires you to evidence your ability to:

1. Demonstrate a complete and accurate healthcare assessment, relevant to specialty, based on information gathered from the patient and the clinical context.
2. Apply knowledge, skills and interpersonal communication to accurately detail the key components of a successful handover, and apply this in clinical handover scenarios to other intra- and interdisciplinary health professionals.
3. Critically analyse and synthesise health assessment findings, including diagnostic data, to identify, prioritise and communicate health related problems (includes an awareness of differential diagnoses)
4. Demonstrate the application of evidence in analysing patient problems and employing appropriate care interventions.

Assessment Plan:

1. Clinical Placement Assessment Tool (CPAT) 1 & 2
2. Online branched scenario (opportunity for mastery, linked written assessment)
3. VIVA – clinical documentation required as part of this assessment
4. Clinical Handover
 - a. Observing students’ communication skills and knowledge of key components of all models of handover (i.e. transition, shift, interdisciplinary, and nurse-patient)
 - b. Students must reflect on their effort, noting impediments, key information, and relate to patient care.

Academic–industry integration in health

UNIT 3: Transforming Clinical Practice (12 credit points)

Synopsis:

This unit is designed to advance students' knowledge of the social and cultural systems in which their patients are embedded. In order to transform clinical practice, nurses must appreciate the social, political, economic, cultural issues and factors that influence healthcare delivery, as well as patient responses to, and experiences of, illness and healthcare, both nationally and internationally.

Aim:

The aim of this unit is to explore global political, social, cultural and clinical trends and determinants of health that shape patients', organisations' and nursing responses in specialty nursing practice.

Learning outcomes:

Successful completion of this unit requires you to evidence your ability to:

1. Demonstrate knowledge of the nine National Quality Standards at a specialist level.
2. Discuss contemporary clinical/health issues in practice, and incorporate knowledge of the social determinants of health, models of care to develop, implement and evaluate a plan for a specialty area of practice.
3. Critically analyse the impact of social, ethical, political, and cultural influences on a global national or local health issue, generate solutions utilising a collaborative practice approach.
4. Critically examine the governance and politics of Health Care in Australia, and its impact on the nursing profession.

Assessment Plan:

1. Critical analysis using evidence to justify personal and professional stance
2. Seeking literature and critically analysing data on contemporary issues in healthcare
3. Identify a clinical issue or need in the local area and develop an action plan (these may be based on the National Quality Standards).
4. Develop conference abstract for presentation
5. Critical reflective assessment
6. Mentoring and role-modelling opportunity with self-critical reflective outcome

UNIT 4: Clinical Leadership (12 credit points)

Synopsis:

This unit is designed to enhance students' leadership skills in the workplace. Leadership and decision-making skills are essential components to effective healthcare delivery and patient assessment and care. The ability to develop and implement management strategies will give students an effective advantage in their specialty area.

Aims:

This unit aims to foster leadership skills for contemporary healthcare practice. Graduates will develop effective and creative approaches to leadership and management, developing advanced evidence-based strategies for decision-making and patient care.

Learning outcomes:

Successful completion of this unit requires you to evidence your ability to:

1. Explain the clinical leadership landscape in your environment, reflect on leadership theory and develop a plan for becoming a specialist leader.
2. Develop creative and effective leadership and team management skills.
3. Apply evidence-based approaches to contemporary leadership and management into the multidisciplinary practice context.
4. Identify and explain innovative ways to partner with patients to address healthcare needs.

Assessment Plan:

5. Describe the clinical leadership landscape in your environment by:
 - a. Interviewing leaders involved in a change process – Obtain their opinions and insights on leading change
 - b. Discuss a recent change in practice – “How did/could you see yourself as a leader? What was your role? What could you do better? What worked well?”
 - c. As a leader in your current role, develop a change management plan for your area.
 - d. Reflect on the change process and provide recommendations for future practice.
6. Patient partnering
7. Case management and link to patient flow
8. Triage – observation and analysis of processes; teleconferencing in real-time.

Appendix D

University–Industry Integration Framework

