EDUCATING
Health Practitioners
What works?

Highlights from
Ako Aotearoa projects

REPORT PREPARED BY
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FOR AKO AOTEAROA

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contents

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Purpose

This report provides a summary of Ako Aotearoa-funded projects that explore approaches to educating and assessing health practitioners. These projects describe what educators and researchers have done to support the learning of health and allied health professionals, and the extent to which these learning initiatives have worked. As an exploration of learning, teaching, and assessing across an entire industry, this report's focus is inherently interdisciplinary. Its goals are to identify common educational themes across different parts of the health workforce.

This report is based on the findings of 27 projects funded by Ako Aotearoa between 2009 and 2015. These projects include research, evaluations and good practice publications. The projects took place in sites of formal learning (in these cases universities and polytechnics), in sites of ongoing learning (hospitals, home-based care, and clinical premises), and via distance and workshop learning. The collection of projects described in this report reflects the diversity of sub-sectors and settings in the health sector; it describes what works for whom, the theories that underpin the teaching and learning situations, and the pedagogies themselves.

The health workforce

The diversity of learning situations described in this report occurs because of the diversity of people, occupations, and environments associated with learning and working in the health sector. This range includes, for example:

- those entering a health profession who are learning in traditional educational settings (e.g. universities, ITPs)
- regulated health practitioners such as doctors, nurses, midwives, physiotherapists, and pharmacists, already working in a range of settings from hospitals to the community, and from urban to remote rural areas
- aged care and disability support workers working in facility and residential settings
- counsellors working in hospitals, private practice, and/or community organisations.

Table 1 below shows the most recent public data on the professions and occupations that make up the New Zealand health workforce. Differences in specialities and sub-specialties, however, create another layer of diversity. For instance, a neurosurgeon and a public health physician may both be specialist doctors employed by an urban district health board (DHB), but the knowledge and capabilities they need to work effectively are quite different.

Table 1: The New Zealand Health Workforce[1]

Occupational Group		Number	%
Medical Workforce	Doctors	14,395	9%
	Dentists	1,976	1%
Nursing Workforce	Registered Nurses & Nurse Practitioners	47,630	30%
	Enrolled Nurses	2,726	2%
Midwives		2,971	2%
Regulated Allied health, Science and Technical Workforce		23,966	15%
Non-regulated/Kaiāwhina Workforce		62,910 (est.)	40%
TOTAL		**156,574 (est.)**	

This diversity creates challenges in identifying themes relevant to the health workforce as a whole. However, there are topics common across health education that have been identified and explored by the projects Ako Aotearoa has supported, and common areas where further investigation would add value.

It is worth noting that, in many cases, health workforce education occurs in the workplace. Readers interested in this area are also directed to Ako Aotearoa's *Learning in and for work* synthesis report (Alkema & McDonald, 2014b), which discusses this learning setting in more depth.

[1] Most data in this table are drawn from Ministry of Health (2014). More recent publicly available figures have been used for the nursing workforce (Nursing Council of New Zealand, 2015) and midwives (Midwifery Council of New Zealand, 2014). Figures for non-regulated occupations are likely to be under-estimates given difficulties in gathering robust data on this part of the workforce.

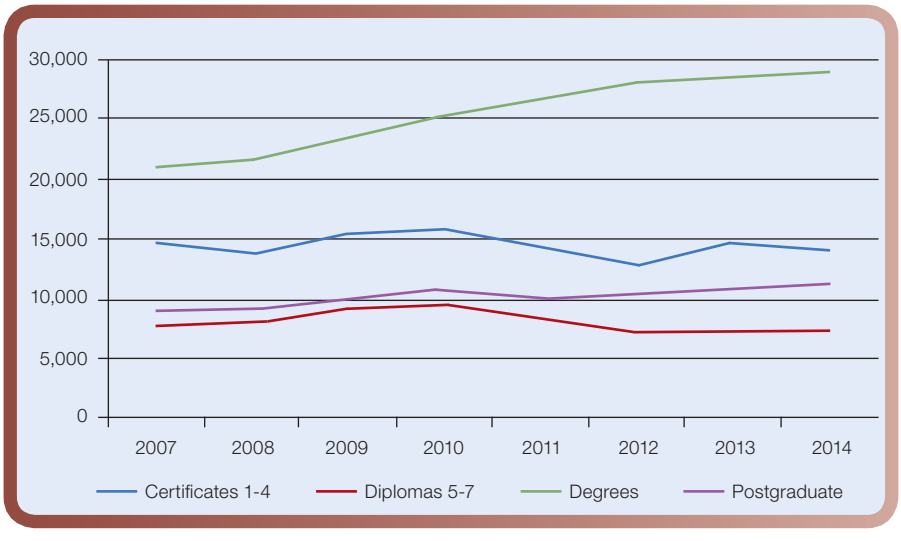
Health workforce education

Health education prepares health practitioners with the knowledge, skills and ethical behaviours required to deliver high-quality, patient-centred care.[2] Health practitioners need to be responsive to people and communities and to be able to work in inter-professional and cross-disciplinary teams. Health workforce education is not only important for practitioners and employers, but also has significant effects on all of us; in extreme cases, good health workforce education can mean the difference between life and death.

For this reason, the education and training system in many health occupations is overseen by an external professional body, such as the Nursing Council of New Zealand or the New Zealand Psychologists Board. These bodies are established under the *Health Practitioners Competence Assurance Act 2003* and are responsible for both initial registration requirements and ensuring the ongoing competence of practitioners in their area. They therefore regulate many aspects of education and training. This includes establishing required competencies and ensuring that providers have the resources needed to deliver effective education programmes. For many areas of the health workforce that are not covered by one of these bodies, training is supported by Careerforce: the industry training organisation for health and social services.

As shown in the figure below, the majority of people studying in the health area are learning at degree level, which is the basic entry qualification for most of the regulated health workforce. The next largest group of learners is studying at levels 1-4, which includes the basic qualifications for much of the non-regulated/ kaiāwhina workforce. Postgraduate study is also a significant part of health education; in 2014 19% of learners in the Health field were at postgraduate level, a percentage exceeded only by the Engineering and Education fields. In Medicine and Nursing, the percentage of learners studying as postgraduates was over 25%.

Figure 1: People studying in the 'Health' broad NZSCED field, 2007-2014[3]



[2] Note that not all parts of the health workforce actually provide care. Health and allied health practice can also involve education, advocacy, scientific analysis, health protection activities, and other forms of work that do not involve directly supporting and/or caring for individuals or groups.

[3] Data are taken from Education Counts (n.d.), include both international and domestic students, and represent learners not EFTS. The actual number of people studying at levels 1-4 in the Health area is significantly higher than shown, but this is due to a very large number of people studying Health and Safety programmes. As most of these learners would not be considered part of the health workforce, those values have been removed from the data presented here.

Effective health workforce learning: Key project findings

The learning demands on the health workforce are considerable. Not only must workers have the theoretical knowledge required for their profession, they must also be able to apply this in practice, either independently or in teams, and then reflect on and evaluate their own practice throughout the course of their working lives (Billet & Henderson, 2011). Finlay (2008) focuses on the importance of reflection when she talks about professional practice in the wider context as being:

> … unpredictable and messy. In order to cope, professionals have to be able to do more than follow set procedures. They draw on both practical experience and theory as they think on their feet and improvise. They act both intuitively and creatively. Both reflection-in and -on action allows them to revise, modify and refine their expertise. (p.3)

The outcome of this learning, its application, and the reflection process means improved outcomes for patients or clients. Learning and practice therefore need to prepare health practitioners to provide patient-centred treatment and care, whether in a community or clinical environment. Most importantly, this means practitioners need to be culturally aware and competent and, working in increasingly diverse communities, they need to develop the capabilities required to work with this diversity.

Cultural Competence and Cultural Safety

A key feature of Aotearoa New Zealand's health sector is its recognition of the importance of culture,[4] which has significant implications for governance, management, service design, and practice. The Aotearoa New Zealand health sector serves a culturally diverse population, importantly including whānau, hapū and iwi. Developing self-knowledge of one's history, values and beliefs and their effects on the population, whānau and/or individual health care recipient is therefore a critical capability for practitioners in all areas of the health sector. Also, critical and reflective practice is a building block for addressing inequities in health care access and health outcomes. Equity is a human and Indigenous right, a Treaty of Waitangi obligation for the health sector, and is associated with population/whānau/patient-centred care, and student-centred learning in health care.

The goal of cultural competence is respectful and effective engagement with people of different cultures to improve health and address inequities. Cultural safety, in addition, provides a critical framework for examining the inherent dimension of power between health professionals and recipients. The population/whānau/person who are served subjectively assesses the cultural safety of the heath care practice, service or programme. The recipient's subjective assessment is associated with cultural empowerment and better health outcomes.

Much of the work on culturally safe practice originated in the area of nursing with Dr Irihapeti Ramsden (Ngāi Tahupōtiki, Rangitāne) whose work referenced other Indigenous theorists' exploration of the effects of colonising forces on First Peoples globally. Doctor Ramsden's whānau named cultural safety 'Kawa Whakaruruhau' for students in nursing and midwifery education, and for all health care recipients. Kawa Whakaruruhau is a metaphor for health sector strategies protecting and sheltering all recipients of health care practice, as well as in health care education. Cultural safety became part of Aotearoa New Zealand nursing and midwifery curricula in 1992 and, since then, the role of culture as an aspect of health practice has increasingly been recognised across all health disciplines.

The author and Ako Aotearoa would like to thank Dr Beverley Parton (Massey University) for the above description.

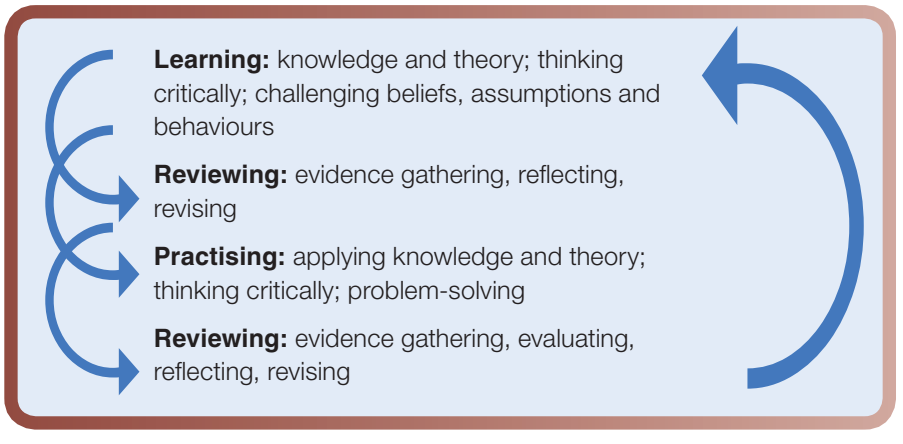
[4] Culture, defined as the values and beliefs of a group or population, extends beyond ethnicity to include gender, sexuality, (dis)ability, age, generation, socioeconomic status, spirituality, religious beliefs, and more.

In short, health care practitioners must have both the required knowledge and the ability to apply it in their workplaces. Their learning – as instances of professional education – requires that content and practice are inherently interwoven. This often requires them to challenge their assumptions, beliefs and behaviours in day-to-day work, and be problem solvers who work on critical issues – often in situations where they need to find innovative solutions in order to deliver the patient-centred care that is required of them. Central to these behaviours is the development of reflective skills that need to be taught and exercised during the learning and practice process (Molloy & Keating, 2011). It is this point – how health workforce education can encourage reflective applied practice – which forms the common thread running through these Ako Aoteaora-funded projects.

Reflective practices[5]

A key theme in the body of work surveyed in this report is the enactment of reflective theory in formal ways. These health practitioners/investigators have used evaluation as one of their approaches to reflective practice. Their formal reflections examine the extent to which their interventions have improved the practitioners' knowledge and skills and how this learning has been applied or transferred to their work with patients or clients.

Figure 2: Developing the reflective practitioner



Both quantitative and qualitative methods have been used to reflect on and evaluate the teaching and learning. These include traditional methods, such as surveys, interviews and focus groups, as well as specialised tools that have been specifically used or developed to assess the impact of interventions or quality of learning, such as the CLES+T tool used by Sims *et al.* (2010) and Watson *et al.* (2012).

While the integration of theory and practice is brought together by those responsible for the education delivery, it is enhanced by the attitudes and behaviours of those who are learning. The surveyed projects show that a variety of approaches can be used to develop an understanding of the balance between theory and practice. In the process of developing this understanding, both the novices and the experts further develop themselves as reflective practitioners. As such, the learning becomes deep, rather than surface, and enables the practitioners to think critically and problem-solve in a range of predictable and unpredictable situations.

[5] Reflective practice is not confined to the health sector, and Ako Aotearoa has supported projects on this topic that are not part of this report as they do not specifically cover health workforce education. See, for example, Clarke (2012), Honeyfield *et al.* (2010), Stewart (2012).

Effective applied learning

Education equips those entering a profession in the health sector and those already in it with the knowledge and skills they require to deliver patient-centred care. It is learning that enhances their practice while in the workplace. Ako Aotearoa's wider body of workplace learning projects shows the need for collaboration and partnerships in learning situations. This means learners, employers and education providers working together to bring about new learning and practices (Alkema & McDonald, 2014b).

Professional health education usually starts with learning in an institution, which incorporates a gradual crossover to work-integrated settings. Continuous professional health education then occurs alongside work as practitioners complete the ongoing registration requirements for their profession and/or seek to find new and better ways to improve the quality of care they deliver (and subsequently improve outcomes for their patients or clients). Conversely, people in the non-regulated/kaiāwhina workforce may first be hired as employees and then be given training that involves both on and off job elements (e.g. through the industry training system). In either case, learning occurs in both face-to-face and digital environments.

These can be thought of as formal learning situations, in that they are generally guided by experts. Lecturing, tutoring, coaching, mentoring, preceptoring, and supervising are all terms used in the health sector to describe the actions of different types of educators at various stages of the teaching and learning process. However, the projects summarised in this report and other Ako Aotearoa work show that significant learning also occurs in peer-to-peer situations and within communities of practice that grow up around and support learning. This can be seen, for example, in Alkema & McDonald's (2014a) evaluation of the Careerforce 'Learning Reps' initiative, or Fourie & McClelland's (2011) trial of Dedicated Education Units.

Whatever the specific learning situation, one distinctive feature of education in the health field – shared with other professions such as teaching – is the need for practitioners to be able to transition smoothly into professional practice and to progress as learning professionals throughout their working lives (Billet & Henderson 2011). To do this, they need authentic learning experiences that allow them to learn and develop their professional identity as health practitioners. Therefore, initial education includes learning in practice-based settings, authentic simulated settings, or using scenarios (with actors or with real examples). This enables beginning practitioners to transfer learning into their work contexts.

The teaching and learning methods developed for this purpose that have been trialled, evaluated and reflected on in this body of work are underpinned by a variety of different learning theories. For example:

- **Experiential learning (Kolb, 1984)**
  - Kolb's theory is based around learning from experience. See, for example, *Clinical simulation in nursing: A literature review and guidelines for practice,* 'whereby the student learns and reflects on their actions and decision making, analyses the content and considers how to develop more skilful nursing actions and practice'." (Edgecombe *et al.,* 2013, p.17).[6]

[6] References to Kolb's work can also be found in Pearson, 2012; and Gee *et al.*, 2011.

➢ Situated learning (Lave & Wenger, 1991)

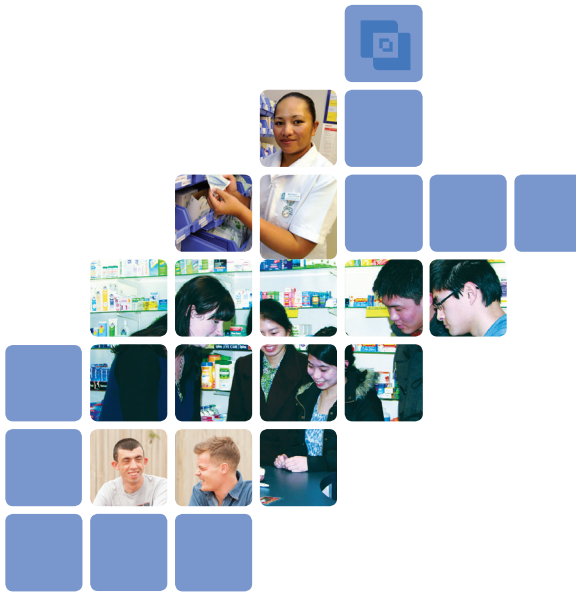
- Lave and Wenger's theory relates to learning with others in a community of practice. See for example, *Communication in nursing practice: Critical success factors for ESOL students,* where "members of the community learn from each other through participating in and sharing in a common context of real practice. Learning is therefore "situated" in a particular context; it occurs through a process of 'social co-participation'." (Eyre, 2010, p.16).

➢ Transformative learning (Merizow, 1997)

- Merizow's theory has adults changing what they do as a result of new learning that challenges their existing beliefs and assumptions and then reflecting on these changes. See, for example, *'Opening our eyes': The transfer of learning to enable better person-centred support services:* "It makes me reflect in so many ways of how to do things…"; "The training set a standard for the work and basically your eyes are more open…you are more aware of what tasks you are undertaking". (Murray, 2015, p.4,5).

➢ Reflective learning (Schön, 1983)

- Schön … gives focus to the critical thinking that is required to both reflect 'in' action and reflect 'on' action. This means professionals are reflecting and changing their practice as they go. See, for example, *Drama Students as Patients: Ko ngā tauira whakaari hei tūroro* (Nicholson-Burr & Kelly, 2010).



What each of these theories has in common is an emphasis on learning as a process of applying knowledge to a practice situation and then testing, evaluating, and reflecting on the results. This evaluating and reflecting happens both at the individual and community of practice level. The communities of practice described in this body of projects include novices and experts; novices and novices; experts and experts; and cross-disciplinary teams.

The approaches used in Ako Aotearoa-supported projects to clarify the connection between theory and practice, and to provide the opportunity to learn in genuine and realistic settings, include:

- Workplace placements and practicums that integrate learning with practice by providing direct clinical experiences.
  - *"… the integrations [of learning and practice] are seen as being derived from experiences in two distinct kinds of social settings (i.e. the educational institution and the practice setting). It is often assumed that distinct forms of knowledge are learnt in each of the settings (i.e. theory in one and practice in the other). However, it is likely that the development of conceptual, procedural, and dispositional knowledge and in both their canonical and situational forms can arise from experiences in both kinds of settings, typically when brought together."* (Billet & Henderson, 2011, p.29)

> *"… practicum is viewed as a context within which the formative process of development as a professional can occur. It is often in the practicum context that students develop a sense of professional identity, as they have opportunities to integrate theory and practice … In these settings, it is essential that learning is maximised so that the graduate is characteristically professional and able to problem solve in a range of experiences rather than reliant on being told what to do."* (Smith *et al.*, 2012, p.8)

- Simulations that replicate real-world settings and experiences in a highly authentic learning environment.
  - *"Simulation is a practice that resembles reality. … As science, technology and education have progressed, simulation has become a sophisticated and innovative learning and teaching approach encompassing a vast spectrum of educational modalities. … This style of teaching and learning is highly interactive, allowing multiple learning objectives in a realistic simulated environment whilst mirroring the clinical setting."* (Edgecombe *et al.* 2013, p.5)

> *"… simulation offers tuition that is constructive, realistic and highly participatory whilst representing believable working environments."* (Bland & Ousey, 2010, p.6)

- Scenarios, in which learners apply their knowledge and skills to solve an authentic problem or complete a particular professional task.
    - *"Scenario-Based Learning (also called "problem-based learning" or "case-based learning") is an instructional environment in which participants solve carefully constructed, authentic job tasks or problems. While solving the problems, they are carefully guided to learn the associated concepts, procedures, and heuristics of expert performers."* (Clark, 2009, p.84)

> *"It was expected that real life scenarios would provide students with a learning tool to gain complex knowledge that can be more easily understood, remembered and applied."* (Clarke *et al*., 2012, p.4)

Underpinning these broad learning approaches are a number of specific pedagogical approaches and support arrangements that aid the development of both novice and expert practitioners (see the Topics and Pedagogies table on p.24 of this report). Examples of approaches explored in the projects include:

- (with specific reference to Māori students): tutorials, study weekends, *wānanga/cohort, culturally relevant study spaces,* and small group teaching
- problem-based learning[7]
- context-based learning[8]
- inquiry-based learning[9]
- practice using equipment
- e-learning and online communities
- peer support networks.

As noted earlier, continuous professional development (CPD) is a critical concept within health practice. As with initial education, this needs to be applied and flexible, underpinned by learning theories and use of the different approaches listed above. It is worth noting here the opportunities that arise through the use of technology, i.e. video material, online learning and discussion forums that keep those learning in their own time or from a distance in contact with each other and developing as a community of practice.

[7] Problem-based learning encourages a student-led discussion around problems from clinical cases or problem scenarios. Curtis *et al*., (2012, p.12) note that this is a distinctive feature of health professional education.

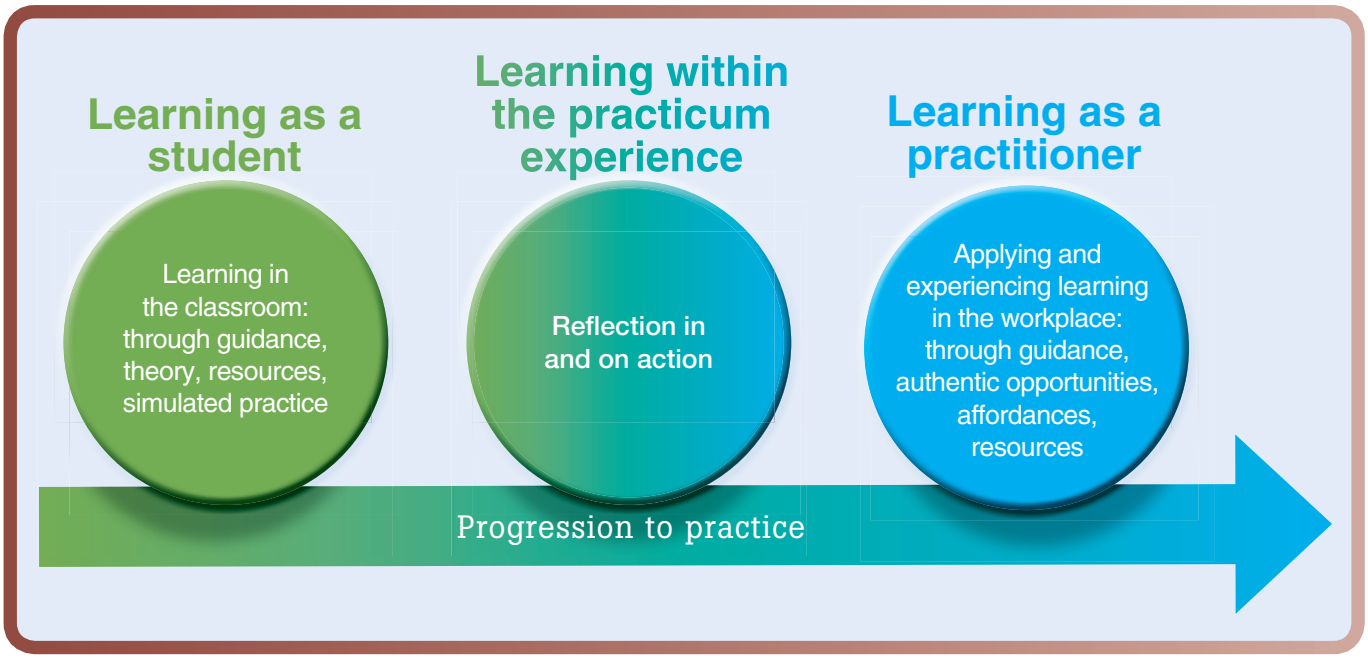
[8] The process of context-based learning involves students being provided with a scenario, and undertaking a student-led process of hypothesising, which ultimately results in the development of the students' own learning needs. The identified learning needs are explored by the student group, who use current research and resources to consolidate a position and present this to their peers (Trimmer, Laracy & Love-Gray, 2010, p.1).

[9] Inquiry-based learning involves student-led discovery of factors that contribute to the health of communities, how to research these factors, and actions that would improve community health. By being practical in nature, an intention of this approach is to develop practical skills of relevance to the workforce. By being research focused, an intention is to increase the desire for research focused post-graduate study, (Phibbs, Severinsen, & Walton, M., 2012).

Project highlights

This section provides brief summaries of health education projects and publications supported by Ako Aotearoa. The summaries have been organised into two sections to assist the reader in identifying material useful to their context – either initial or continuing education – although it should be noted that there are commonalities around pedagogy and reflective practices. Initial education has been further divided into classroom-based learning and practicums (which can be known by a variety of names, and include simulated practicums). Practicums are another distinctive element of health workforce education, and can be seen as a transition space from 'learning as a student' to 'learning as a practitioner'.

Figure 3: Transitioning from the classroom to the workplace



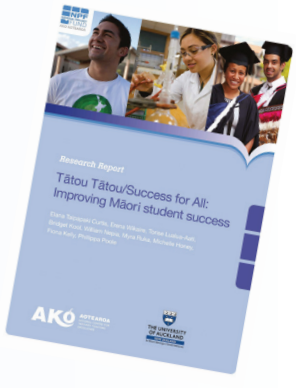
Getting started: Initial education

Initial education starts the health practitioner on their way to developing their professional identity. It provides them with the knowledge, theory and practice they need to be able to transition to the world of work where they start to operate as health practitioners. It starts them on the road to thinking critically about the translation of theory into practice, especially when there are opportunities for scenario-based learning or simulations.

Classroom-based learning

Curtis, E., Wikaire, E., Lualua-Aati, T., Kool, B., Nepia, W., Ruka, M., Honey, M., Kelly, F., & Poole. P. (2012). *Tātou tātou/ success for all: Improving Māori student success*

This qualitative study used Kaupapa Māori research methodology and the Critical Incident Technique (CIT) to explore the teaching practices used in non-lecture contexts that either help or hinder Māori success in degree-level study in nursing, pharmacy, medicine and health sciences and the associated changes that would need to be made to better support Māori students in degree level study in the health field. The team members used CIT as it allows students to describe specific events and their outcomes. This in turn can be analysed and key themes extracted and explored.



For this project, non-lecture contexts included academic and pastoral support interventions used by the Māori and Pacific Admission Scheme (MAPAS). These included additional tutorials, study weekends, wānanga/ cohort meetings, provision of MAPAS-specific study space, general programme tutorials/seminars/workshops/laboratories, small group clinical teaching (for example, ward rounds, bedside), case studies/problem-based learning (PBL), and work-based placement or internships (p.12).

The following contexts and conditions in the Māori Student Support Services helped Māori learners:

- MAPAS tutorials where learners felt safe and comfortable about asking questions. These tutorials were especially useful when the tutors had both content knowldege and teaching expertise
- MAPAS space where learners had access to resources and learning tools
- MAPAS coordinators who served as connectors between the learners and academics and acted as role models and teachers
- MAPAS coordinators who had academic and structured relationships with learners
- senior Māori students who acted as mentors and role models.

In the undergraduate programme students would have been helped by:

- better understanding from fellow students and academics about the descriminatory impact of racial stereotyping and a more positive approach to affirmative action initiatives, such as Māori Health Week
- clinical educators who were focused on learners' needs and were approachable and enthusiastic
- teaching and learning opportunities that assisted the connection between theory and practice

- assessors who had more understanding of, and were better able to, assess the Hauora Māori Domain
- the inclusion of Māori cultural values into programmes
- a more cooperative learning environment for students.

Students in the Māori Student Whanaungatanga context were helped by being able to share experiences with other students and build social networks.

The report concludes that high-quality tertiary teaching for Māori students within health programmes should:

- use effective teaching and learning practices
- provide academic and pastoral support that is culturally appropriate
- provide a culturally safe learning environment
- encourage cohort cohesiveness.

Edgecombe, K. (2013). *Collaboration in clinical simulation: Leading the way.*

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This project looked to increase and support the collaboration of nurse educators involved with clinical simulations. The aim was to bring them together to share ideas and resources. The project started with 22 lecturers attending a two-day introductory workshop and the setting up of a community of practice web page and a literature review on good practices for teaching and learning in clinical simulation.

The literature review and guidelines for practice provided recommendations and strategies to be implemented when teaching in simulation. These included:

- having orientation to the simulator/simulation exercise
- having clear learning objectives and outcomes for students
- making the simulation exercise reflect reality by having props, resources and paper work that students would encounter in the clinical environment
- having planned and structured debrief sessions.

Stewart, K. (2013). *Using stories in human science lectures: Demonstrating relevance.*

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This publication describes what happens when case study stories are used in laboratories or lectures. The aim of the stories is to help support or reinforce the underpinning scientific theories being taught in lectures and make links to future workplace practice.

To test the extent to which the stories worked, first-year nursing students were asked, via a questionnaire, about how much they remembered of stories used in a previous semester and why the stories had been memorable for them. Their responses showed stories were memorable when they resonated with their personal experience, were true, were about a well-known person, or evoked an emotional response. Students also remembered stories when they were reinforced by follow-up activities in laboratories.

Clarke, J., McCulley, M., Lys, I., Stewart, T., & Milne, J. (2012). *Response to scenario-based resources in a first year human bioscience university course.*

This pilot project looked at whether scenario-based resources, provided as an additional learning resource, improved and supported first year students' learning on the topic of endocrinology. The team chose a scenario-based approach as they thought this "would provide students with a learning tool to gain complex knowledge that can be more easily understood, remembered and applied" (p.4). They also chose the topic of endocrinology, as this is a subject with which students struggle.

Two different cohorts of students (distant and on-campus) used the resources. The extent to which these resources made a difference to the students was measured by a student questionnaire, which recorded their preference and performance on the endocrinology topic in their final examination.

While the students thought favourably about the scenario-based resource and how it supplemented their learning, it did not seem to have an impact on the students' choice of the topic and their performance in the examination. The number of students choosing the topic declined. The results of one cohort improved and the other declined.

Phibbs, S., Severinsen, C., & Walton, M. (2012). *Utilising eLearning environments to deliver inquiry-based learning.*

This Prezi publication describes how to enhance distance students' engagement and enjoyment in a compulsory social science paper on community health assessment through an inquiry learning approach. Students gather and present evidence for assessment in the following ways: visually through PhotoVoice presentations of the community they are investigating; the development and collection of data through a community audit tool (CAT); reports incorporating the findings from photo activities and surveys.

The evaluation of the inquiry learning approach, conducted through an online survey, showed the students valued the inquiry learning approach along with developing their practical and research analysis skills.

Bland, M. & Ousey, K. (2010). *The effectiveness of simulation in preparing student nurses to competently measure blood pressure in the real-world environment.*

This project evaluated the effectiveness of simulation in the teaching of clinical skills to Year One nursing students at two schools of nursing. Trainee nurses in both schools completed survey questionnaires. Time One was was measured after they had been taught the theory and practised blood pressure measurement (BPM) in a simulated environment. Time Two was measured after a clinical placement that included BPM.

Following the simulation sessions the majority of students said they felt well prepared to undertake BPM. This finding was supported by preceptors/ mentors in clinical placements, the majority of whom thought the students were able to undertake the practices associated with BPM and had a good understanding of the relationship between theory and practice.

The project concluded that simulation plays an important role in preparing students to competently measure blood pressure in real-world environments.

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Nicholson-Burr, M., & Kelly, J. (2010). *Drama students as patients: Ko ngā tauira whakaari hei tūroro.*

These videos focus on the development, preparation, enactment and reflection on simulations in mental health, inpatient and community settings. The educators aimed to engage their nursing students through using scenarios that were as lifelike as possible. They saw simulation as "an opportunity to challenge and extend the existing knowledge of their nursing students". The key to the success of the simulation exercises and to engaging the students was that they were "authentic, realistic, timely and unpredictable". The team thought that using actors added realism and depth to the learning situation and was more successful than using mannequins.

The videos also describe the reflective and debrief process used post simulation. This has the nursing students reflecting amongst themselves 'in' action within the small groups involved in the simulation, followed by reflection 'on' action with the wider group of students and educators.

Hay, W-M. (2009). *Accuracy and confidence of objective structured clinical examination pass-fail decisions.*

This study explored the factors underlying decision-making when there is a need to aggregate assessment results using the OSCE (objective structured clinical examinations) format. The study explored how increasing the amount of data on student performance affects decision-making and confidence in decisions made by examination boards.

The 35 assessors involved in the study were shown authentic, anonymised student scores for an increasing number of OSCE stations and asked to make pass-fail decisions and give a degree of confidence in this decision. The findings showed given there is generally a pass rate of in excess of 95%, assessors are more familiar with good performance and subsequently with assigning pass rates. The study also found assessors were over-confident when it comes to making difficult decisions and when they are uncertain they tend to pass students.

Moriarty, H. (2010). *Learning to portray empathy.*

This video series shows health professional students who are learning the skills of motivational interviewing and brief intervention through role-play. The video clips selected for this resource demonstrate good-practice examples of counselling techniques that can encourage empathy within the interaction.

The clips are designed to provide an opportunity to improve upon interpersonal skills within the context of a professional interaction. The clips demonstrate certain interpersonal skills and behaviours that facilitate improved rapport and communication and portray empathy in the context of a motivational interview or brief intervention. These skills are useful for assessing and assisting individuals towards behaviour change.

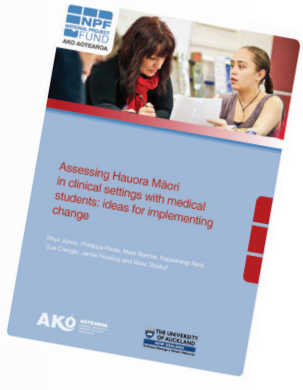
The clips are supported by information about the concepts of empathy, motivational interviewing, brief intervention and learning through role-play. There is also a recommended reading list.

Practicum-based learning

Practicum-based learning, or learning in practice-based settings, provides learners in initial, classroom-based education with the opportunity to apply what they have learnt. Billet and Anderson (2011) argue they are more than this as they provide learning experiences in their own right. They are, "central to the development of the kinds of knowledge required for effective practice, and also the capacities that will serve graduates well in monitoring and sustaining their effectiveness as occupational practitioners" (p.viii).

Jones, R., Poole, P., Barrow, M., Reid, P., Crengle, S., Hosking, J., & Shulruf, B. (2013). *Assessing Hauora Māori in medical students in clinical settings.*

The purpose of the study was to develop assessment methods, tools and staff development processes to be used to assess Māori health competencies of medical students in clinical settings.



Cultural competence is described as " … moving beyond a focus on patient culture. It encompasses reflection on health professional culture, power and the societal context, and how these influence patient care" (p.1)[10]. Cultural competence involves a process of ongoing self-reflection rather than the acquisition of a defined set of expertise.

The project developed assessment tools, which were then used and evaluated by students. Students completed pre- and post-questionnaires at the end of their fourth-year general medicine attachment which assessed the extent to which their views on Māori health and related topics had changed.

Assessment of cultural competence happens over time and takes place through a range of mechanisms, including clinical supervisors' reports, observations and client/patient feedback, along with the students' portfolios of encounters and critical events, supported by reflective commentaries.

The authors concluded the interventions used on the project showed limited effectiveness in terms of improving learners' attitudes and beliefs, engagement, and satisfaction with cultural competence. However, this may have been due to the fact that the project did not involve guidance on which tools were most effective in assessing cultural competence. The work concluded there was a need for professional development of teaching staff and clinical supervisors, and for commitment at the organisational level to promote cultural competence teaching and assessment.

[10] Note: this definition comes from the Summary Report.

Smith, A., Sanders, M., Norsworthy, B., Bathow, S., Miles, L., Ozanne, P., & Weydeman C. (2012). *Maximising learning dialogue between workplace mentors and students undertaking professional field-based experiences.*

This study explored the use and impact of mentoring in the field-based practicum placements of early childhood and counselling students. It involved online questionnaires with 27 student and mentor pairings in early childhood and counselling, followed by four interventions related to mentor conversations and a final online questionnaire. Following the initial data analysis, subsets of students and mentor participants were interviewed.

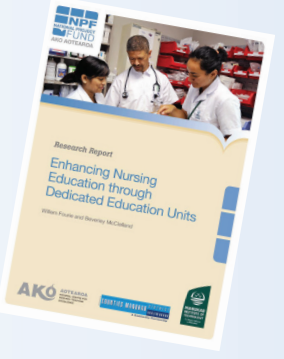
The study identified that:

- Three key factors related to effective practicums were: developing a meaningful relationship, open conversation at a deep level, and the opportunity to challenge and be challenged.
- The specific interventions used were useful for building relationships and enriching dialogue. They enabled trust to be built and brought structure to the analysis of practice.
- Early childhood and counselling participants viewed mentoring differently, with the latter seeing it as a more collegial process and the former focusing more on the mentor as the expert.
- Counselling students expected a higher level of decision-making in the relationship than the early childhood students did.
- Both groups found it challenging to make good use of their times with mentors and some reported it was difficult to make time for meetings.

A number of factors underpin the successful use of mentoring interventions, such as how students and mentors conceptualise the role and evaluate the contributions of each other, the need to commit time to a mentoring relationship, the importance of agency and getting the balance of this right with the student, and the necessity of mentors to possess the necessary skills to undertake the role.

Fourie, W. & McClelland, B. (2011). *Enhancing nursing education through dedicated education units.*

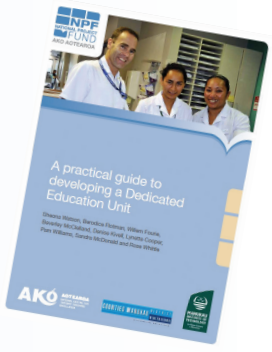
In this action research project, team members from the Manukau Institute of Technology and the Counties-Manukau District Health Board explored the potential of dedicated education units (DEUs) to support undergraduate nursing students, and made recommendations on the model's suitability for ongoing undergraduate nursing clinical education. The project was conducted in two cycles, and data was collected through focus groups of students, staff, Charge Nurse Managers and the action group (the latter also kept reflective journals), minutes of action group meetings, and questionnaires with students.



The team found that:

- The official welcome and orientation of students to a DEU need to be well-planned and structured, because they influence the students' learning experience. Orientation Day was important for making the students feel welcome, giving them a sense of belonging and clarified expectations.

- The roles of the Clinical Liaison Nurse (CLN), the Academic Liaison Nurse (ALN) and Charge Nurse Managers are critical to student learning. While each has a specific role to play in the DEU, all three contribute to an effective, structured and inclusive learning experience.
- Good teamwork is necessary to maximise clinical learning opportunities for students and to ensure the students feel part of the team.
- In this project, peer support occurred between students in the DEU, such as between student nurses in different year groups, between students and the student doctor, and between students and staff on the wards.
- The supportive learning environment led to a growth in student confidence which subsequently led to students being prepared to take responsibility for their own learning and to take on more complex tasks.
- Student learning needs were satisfactorily met through planning and good communication by the CLN and ALN, and their ongoing feedback to students on their performance.
- An improved learning experience also came about through other staff who gained in confidence through the DEU and worked to improve their own practice and be positive role models.
- The lessons learned from the project included the importance of funding, making the right appointments, the need for a coordinator, and the need to provide all students with the opportunity to request a DEU. This project resulted in the development of a practical guide to developing a dedicated education unit (Watson *et al.*, 2012).



Betony, K., Yarwood, J., Hendry, C., & Seaton, P. (2012). *Student nurses' exposure to primary health care nursing: issues and innovations.*

This project, conducted through an online questionnaire completed by 14 to 17 Heads of Nursing, highlighted challenges in finding quality clinical placements for undergraduate nurses, particularly in the primary health care (PHC) field. This study found:

- a lack of appropriate PHC placements across the country, with competition for student placements
- most of the organisations taught PHC within their teaching programme, rather than having students exposed to it on placements
- innovations identified, which would increase PHC placements, included:
  - the establishment of DEUs
  - curriculum revision
  - final year PHC placements offered only to students targeting PHC settings on registration.

Sims, D., Watson, P., Seaton, P., Whittle, R., Jamieson, I., Saarikoski, M., & Mountier, J. (2010). *Evaluating the quality of workplace learning for nursing students in community settings.*

Watson, P., Seaton, P., Sims, D., Whittle, R., Jamieson, I., Saarikoski, M., & Mountier, J. (2012). *Evaluating the quality of workplace learning for student nurses in hospital settings.*

Undertaken by the School of Nursing at Christchurch Polytechnic Institute of Technology (CPIT), these projects tested the validity and reliability of the Clinical Learning Environment, Supervision, and Nurse Teacher (CLES+T) scale as a tool for assessing students' perception of the quality of their learning. The team members concluded that CLES+T is a valid and reliable tool that can be used by tertiary teaching institutions to evaluate the quality of clinical learning environments in community settings and in hospital settings.

Students' views of their placements, as measured by the tool, found that, in community settings, as the duration of the placement increases, students' feeling of connection with the clinical community of practice increases – as do their ratings of satisfaction with the supervisory relationship. However, in hospital settings, their perception of the nurse teacher decreased.

There were no significant differences between first, second or third year students' perceptions of community clinical learning. However, in hospital settings, first year students rated their nurse teacher significantly higher than second and third year students, and third year students perceived supervisory relationships as significantly better than second year students did.

Eyre, J. (2011). *Finding a voice: Supporting ESL nursing students' communication in clinical placement.*

This study identified the importance of providing direct and specialised instruction to students, who have English as a second language, to help them with the communication skills required for placement. The study found four major factors that either supported or inhibited students' participation in their placement community. The two intrinsic factors were the students' proficiency with the English language (enabling them to develop therapeutic relationships with clients and working relationships with colleagues), and the ability to use learning strategies. The extrinsic factors were the quality of the preceptor and how they facilitated or blocked the students' entry into their placement, and the extent to which there was an inclusive learning environment.

Continuing professional development

While initial education prepares health practitioners for work, continuing professional development ensures they continue to grow their professional knowledge and practice, challenge their assumptions, beliefs and behaviours, and develop a commitment to life-long learning. This is a core element of health workforce education.

Murray, N. (2015). *'Opening our eyes': The transfer of learning to enable better person-centred support services.*

This evaluation, conducted through an online survey and telephone interviews, describes the extent to which disability support workers transfer their learning to their jobs. The likelihood that learning will be transferred to the workplace is enhanced when:

- trainees get the appropriate knowledge and are taught in a way that suits them (*i.e.* the pedagogical approaches)
- their organisation provides them with the opportunity to use their learning in the workplace (*i.e.* workplace affordances).

This evaluation showed that disability support workers felt they acquired the required skills and knowledge and were able to describe how relevant and useful their training was. They liked being able to practise the new skills on the job and then talk about this in a reflective way with other workers or in the classroom. They thought this reflective process was key to their learning. As a result, the organisation is looking for ways to make more use of the reflection process as part of its wider post-training approach.

Alkema A., & McDonald, H. (2014a). *Careerforce learning representatives: Encouraging learning at work.*

This evaluation, conducted through pre- and post-programme interviews, assessed the impact of a half-day refresher training programme on Careerforce Learning Representatives (peer mentors) who encourage co-working trainees to start qualifications, help trainees to keep on track while they are undergoing training, and support them to complete Careerforce workbooks.

The evaluation found that, as a result of the training programme, Learning Representatives had learnt new knowledge and skills that they transferred to their workplaces to support co-workers, had increased interactions with co-workers, and were enabled to perform their role. This was enhanced when they had:

- managers who supported and actively promoted the role and promoted qualifications
- time to work or sit alongside co-workers to support them with their training
- good relationships and communication with assessors so they know how Careerforce trainees are progressing with their qualification
- co-workers who were interested in industry training.

Pearson, A. (2012). *Evaluation of "Hearing Voices".*

This study used an online survey and focus groups to assess how using an experiential learning approach for training mental health workers on how to work with voice hearers impacted on their attitude and practice in the workplace. It found participants changed from being unsure about speaking with voice hearers about the content of their experience to be being motivated to engage with them. They were also able to document examples of applying the ideas from the course and changing their practice. The report concludes that change in workplace practice came about through staff experiencing for themselves what it was like to hear voices that are distressing within the simulation programme.

Tester R., Moriarty, H & Stubbe, M. (2012). *Demystifying addiction through personal stories: An online educational resource.*

This online resource was developed to support health professionals working with people who have problems with alcohol and other drugs (AOD). It was developed to enable health professionals to better understand the psychological and cultural drivers of addiction and, as a result, develop more confidence when having discussions around AOD use.

The resource provides information about addiction, in particular recovery from addiction, from those who have used services such as Alcoholics Anonymous and Narcotics Anonymous. It is divided into five common themes: personal, recovery, health professionals, trauma, and mental illness. The clips are intended to stimulate discussion and debate, and to challenge existing ideas about addiction and recovery. The video clips are supported by a reflective questionnaire to be used by health professionals.

Gee, S., Scott, M., & Crowther, M. (2011). *Walking in another's shoes: Encouraging person-centred care through an experiential education programme.*

This publication describes the Walking in Another's Shoes programme – an experiential, person-centred training programme for carers who work with people with dementia in residential facilities – and its effectiveness. The thinking underpinning the approach to the training is that carers need to become reflective practitioners who ask questions about residents, see them as individuals and subsequently respond creatively to each person and situation.

The training programme uses an appreciative inquiry approach, is delivered over an eight-month period, and consists of workshops that incorporate lectures, interactive activities and discussions. Evaluations of the training programme, conducted via questionnaires with learners and managers, showed that carers' positive and person-centred attitudes had improved. Furthermore, their clinical managers reported an improvement in the carers' person-centred care.

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Ryan, R. (2009). *Embedded workplace learning: Benefits for the health and disability sector.*

These videos show employers and care workers' perspectives on training undertaken in the health and disability sector. Sitting the bookwork or theory alongside the day-to-day practice showed the interconnection between the two elements and made the training more relevant for the care workers. While there is an expectation that trainees will complete the bookwork on their own, they do have the option of doing this in a group setting, should this approach better suit them. In this integrated learning model, additional support is provided through classes or peer support networks. Employers, care workers and clients noted the increased level of care and service that was being delivered as a result of the training.

Wright, J., & Gardiner, B. (2010). *Employability and professional development: Counselling students' perceptions of counsellor education and beyond.*

This study evaluated professional development workshops for postgraduate distance counsellors. The evaluation used a mixed methods approach and gathered data through online questionnaires and phone interviews.

The most helpful aspects were the live and filmed counselling sessions with trainer feedback during the campus workshops, and the cultural and bi-cultural input. The programme deliverers used the findings to inform their curriculum. They have changed to a more flexible approach, thus the focus is on developing independent and reflective practitioners who are interested in learning and professional development.

Trimmer, W., Laracy, K., & Love-Gray, M. (2010). *Seeing the bigger picture in context based learning.*

This publication describes the use and benefits of CBL scenarios that involve groups of post-graduate nursing students in mental health programmes working through scenarios and taking a student-led approach to critical thinking and problem solving. Here the role of the lecturer shifts from lead educator to facilitator.

The scenarios need to include the complexity of clinical situation so that differing positions and views can be tested and explored in a group setting that mirrors the multidisciplinary environment in which the nurses work.

The team members concluded that a year after using CBL the nurses were showing improvement in their practice and more confidence in putting forward their views on appropriate clinical practice.

Clarke, J., Weller, J. & Farquhar, C. (2012). *Evaluation of training of authors of Cochrane systematic reviews in New Zealand and a pilot of a web-based alternative.*

This evaluation, conducted through pre- and post-knowldege tests and a survey, aimed to assess the current Cochrane Protocol and Analysis course for authors of Cochrane systematic reviews and to compare this with a newly developed electronic educational course. The two-day course uses a didactic teaching approach. The new web-based course used dubbed PowerPoint presentations, worksheet exercises and support from the researcher, using email and a blog.

The evaluation of the former programme showed the majority of participants improved their knowledge. The evaluation of the web course pilot was limited by the number of recruited participants which, in turn, limited any useful conclusions. The evaluators recommended that a modified web course could be developed as a useful adjunct to the current didactic workshop.

Basu, A., Seaton, P., Kirk, R., Hanley, E., Sheehan, D., O'Steen, B., & Allan, M. (2010). *Review of the effectiveness of educational tools for teaching telehealth care.*

This project used a systematic review process to look at good practice associated with the design and conduct of programmes teaching telehealth, i.e. the delivery of health-related services at a distance. The review of 10 studies concluded there were four important aspects to consider:

- the role of context and remoteness that impacts on the technology that it is able to be used
- the user's situation, their characteristics, and readiness for learning in this field and their underpinning technical/computer literacy skills
- the importance of content that was relevant to a range of health care professionals
- the preference learners show for experiential learning approaches, such as simulation, demonstration and practice experience, along with the opportunity to actively engage with providers and other learners.

Stevens, A. and Boladeras, R. (2011). *Developing the usefulness of reflective practice for professional development from within eLearning.*

This publication describes an e-Learning approach used by nurses that contributes towards the requirements for their ongoing Professional Development and Recognition Program (PDRP). The resource is also available for nurses to use in their Nurse Entry to Practice Programme (NETP). In both cases, nurses submit evidence from their practice, along with reflection on it, using an ePortfolio.

The e-Learning site provides reflective practice resources and a discussion forum for nurses. It was facilitated by the coordinator. Evaluation of the resource, conducted using the web-based learning environment instrument (WEBLEI) tool, showed that nurses appreciated the opportunity to learn and submit evidence this way, rather than having to attend a physical workshop. They also showed an increased appreciation of reflective practice and an increased ability to practise it.

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Conclusion

Health workforce education – whether for novices or for experts – needs to integrate knowledge and theory with practice, and needs to do this within a wider regime that encourages reflective practice. Health practitioners, through their ongoing continuous professional development, show commitment to a process of life-long learning. The health workforce education projects supported by Ako Aotearoa reflect this, both in the range and the themes that run through them.

These projects show us that the learning process for the health workforce is not a linear one – it is not a case of learning, followed by practice, then reflection. Reflection happens at all stages of the process – both 'in' and 'on' action – so that practitioners learn new knowledge and skills, think about their application and transfer them to patient-centred contexts. It is important to reflect on how this will happen and what will happen as a result. The approach highlights how learning processes develop practitioners who are able to deliver patient-centred care, which in turn assumes better outcomes for patients.

Learning in this environment is supported by two key elements: appropriate pedagogies, and affordances in workplace settings that allow learning to be transferred.[11] The pedagogies allow the novice and expert practitioners to inquire, problem solve, and think critically. They incorporate classroom experiences and authentic learning experiences through placements, scenarios, simulations, experiential learning and role plays. The affordances provide opportunities for novices and experts to apply their learning, and this in turn leads them to reflect on what they are doing, enabling them to grow as reflective professionals.

Considerations for future work: What else do we need to know?

The 27 projects summarised in this publication cover a range of health educational settings, pedagogies and contexts. As a body of work it reflects the diversity of the sector. However, there are gaps in the work relevant to all parts of the sector which, if addressed, would widen the knowledge base of all health education practitioners.

Recommendation One: Outcome studies

These projects have been clear about the impact the education interventions have had on the learners and/or practitioners, yet the majority have been silent on the extent to which the education intervention has improved the quality of outcomes for patients/clients/service users. More needs to be known about this, given that the intention of education for health practitioners is to improve outcomes for patients.

One way of getting to these outcomes would be longer-term projects and follow-up to interventions. These would require practitioners, as part of their reflective practice, to notice and inquire about what is happening as a result of their new learning and changed practices. While there are ethical considerations to take into account, there is still room for practitioners to operate in this way.

[11] In this context, 'affordances' are the opportunities and supports that allow learners in workplace settings to both develop and apply knowledge, skills, and competencies (see Billet, 2001).

Recommendation Two: More cultural perspectives

There are two points to consider in relation to cultural perspectives. Firstly, there is scope for additional work around the experiences of learners themselves. For example, more needs to be known about approaches specific to health education that meet the needs of and improve outcomes for Māori and Pasifika learners, both in initial and continuing education. This could include exploring issues around career pathways and learner decision-making related to the health workforce.

Secondly, there has been little work done in the surveyed projects that explores the cultural competence of those entering and already in the health professions, despite it being a key distinctive element of health practice in New Zealand. In some cases this may be due to a significant body of pre-existing literature and/or projects, such as the large amount of work on cultural safety in nursing and midwifery, and it is important that Ako Aotearoa-funded work does not simply reinvent the wheel. However, it seems likely that there are disciplines and aspects of health practice where this will not be the case, as in Jones et al.'s (2013) identification of a gap in understanding appropriate cultural assessment in medical education.

Work in this area will require knowing more about how to teach cultural competencies in a way that develops deep, rather than just surface, understanding. A particularly relevant aspect to explore could be the position of this in ongoing professional development, especially given the high number of non-New Zealand-educated practitioners in the workforce (e.g. 43% of doctors are internationally qualified, as are 25% of nurses).[12]

Recommendation Three: ICT and online learning

Further research and evaluation is required around online learning and/or blended learning that involves more than simply using video clips. There is opportunity to explore this, both in initial education and continuing professional development, and to focus on what a coherent programme of learning using digital technology would look like and what its impact would be. This is important, as the limited work on this area in the surveyed body of work indicates it helps time-poor professionals with their learning and also helps those in rural settings to interact with other professionals in their field. The relationship of online modes to the practicum requirements of health workforce education may also be an area worth exploring.

[12] See Medical Council of New Zealand (2013) and Nursing Council of New Zealand (2015).

Topics and pedagogies

Focus Area	Alkema & McDonald (2014a)	Basu *et al.* (2010)	Betony *et al.* (2012)	Bland & Ousey (2010)	Clarke *et al.* (2012)	Curtis *et al.* (2012)	Edgecombe (2013)	Eyre (2011)	Fourie & McCelland (2011)	Gee *et al.* (2011)	Hay (2009)	Jones *et al.* (2013)	Moriarty (2010)	Murray (2015)	Nicholson-Burr & Kelly (2010)	Pearson (2012)	Phibbs *et al.* (2012)	Ryan (2009)	Sims *et al.* (2010)	Smith *et al.* (2012)	Stevens & Boladeras (2010)	Stewart (2013)	Tester *et al.* (2012)	Trimmer *et al.* (2009)	Watson *et al.* (2012)	Wright & Gardiner (2010)
Context-based learning																								•		
Experiential learning										•				•		•										
Inquiry-based learning																	•									
Literature reviews		•			•																					
Mentoring	•																			•						
Assessment											•	•							•						•	
Online learning		•			•												•				•		•			
Placements and practicums			•					•	•										•						•	
Scenario-based learning					•																	•	•			
Simulations				•			•						•		•	•										
Support for Māori learners						•																				
Transfer of learning	•									•				•		•		•								
Workshop-based learning																										•

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