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Editorial

Keep the momentum going: pushing the boundaries of clinical learning and assessment

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The tertiary education sector in Australia and New Zealand has undergone rapid, sometimes unsettling, change in the last 20 years. The sector now faces a complex array of challenges impacted upon by national and international competition, globalisation, digital disruption, the changing expectations of the student body, and the threat of deregulation.^{1,2} However, entry-level physiotherapy education continues to thrive in this constantly evolving environment, and faces challenges 'head on' by providing innovative solutions to some of the stressors, strains and barriers felt by both physiotherapy academics and clinicians.^{3,4} This editorial argues that while this relentless change may often be difficult to adjust to, novel and innovative solutions to the many challenges faced in the provision of physiotherapy education provide breakthroughs that may not be possible if reliant on traditional, sometimes deeply entrenched, ways of thinking and doing things.

In the current higher education environment, physiotherapy remains a highly popular career choice and, as a consequence, the number of entry-level programs provided by Australian and New Zealand universities has continued to rise. In 2005, the Australian Council of Physiotherapy Regulating Authorities (ACOPRA) reported that there were 20 programs in Australia and New Zealand.⁵ Today, 38 programs are offered by 22 Australian and New Zealand universities, which is a 90% increase in 13 years. In addition, five new programs have indicated that they are applying for accreditation, making a total of 43, as shown in Figure 1. The rate of growth in the number of programs has slowed a little since the period between 1995 and 2005, when the number of physiotherapy programs increased from eight to 20, a 150% increase in 10 years.⁵ While growth in the number of programs may be slowing a little, the number of students enrolled in these programs has increased and the types of educational offerings have diversified to differentiate universities in this competitive market.³ Now, there are multiple entry points into physiotherapy including Bachelor, Bachelor with Honours, graduate entry Masters, and extended graduate entry Masters degrees, with some universities offering the same program at a number of different campuses. Growth in the number of programs and student load within each program has always created questions about access to appropriate clinical placements for students.⁶ In 2005, for example, concerns were expressed that the increase in student numbers could mean that some students would be unlikely to have access to a comprehensive program of supervised clinical practice.⁵

The pressure on clinical practice sites from the growing number of students was, and remains, a significant concern for the profession. However, when systems and people are under pressure, innovation is required rather than resting on one's

laurels. One solution that has emerged is simulation-based education, predominately in the form of simulated patients portrayed by professional actors. As physiotherapy academics embraced simulation-based education, the prevailing view was that clinical education would not be removed from curricula, but rather that simulation-based education would supplement and enhance traditional clinical experiences.⁷ To this end, a large multi-centre, nationally funded study was developed by some key physiotherapy academic leaders in partnership with the Australian Physiotherapy Association, the Australian Physiotherapy Council, registration boards, Laerdal Medical Australia, and Health Departments. The research program involved four randomised controlled trials that investigated the effect on students achieving clinical competencies when 1 week of a 4-week traditional clinical placement was replaced with simulation-based education using simulated patients.^{8,9} These landmark publications provided the first tangible, high-quality evidence in physiotherapy that clinical education using simulation could replace 25% of clinical time with real clients without compromising students' attainment of the professional competencies required to practise.^{8–10} While providing strong empirical evidence, this research program also demonstrated that big strides can be made in the academic and clinical landscape when academic leaders work in partnership with professional bodies.

This seminal work was then followed by a large-scale national project, supported financially by the now obsolete Health Workforce Australia, that rolled out simulation-based learning, using mostly professional actors as patients, into 16 physiotherapy programs in Australia between 2014 and 2015. Approximately 1800 physiotherapy students participated in the project, completing 13 200 days of simulation-based training across three core areas of physiotherapy practice: cardiorespiratory, neurological and musculoskeletal physiotherapy.^{4,11,12} As a consequence, simulation has now become a significant and accepted part of most entry-level physiotherapy curricula in Australia and New Zealand.¹³

For the first time in the physiotherapy profession's history, simulation is currently being trialled as an alternative assessment of competence to practise for physiotherapists with overseas qualifications wishing to work in Australia. The Australian Physiotherapy Council, the body responsible for the assessment of overseas-qualified physiotherapists seeking to work in Australia, has designed a scientifically robust trial in conjunction with academics across Australia to determine whether simulation is as valid an evaluation as the final, single-event comprehensive assessment currently conducted on real patients.¹⁴ In doing so, the Australian Physiotherapy Council has developed a state of the art

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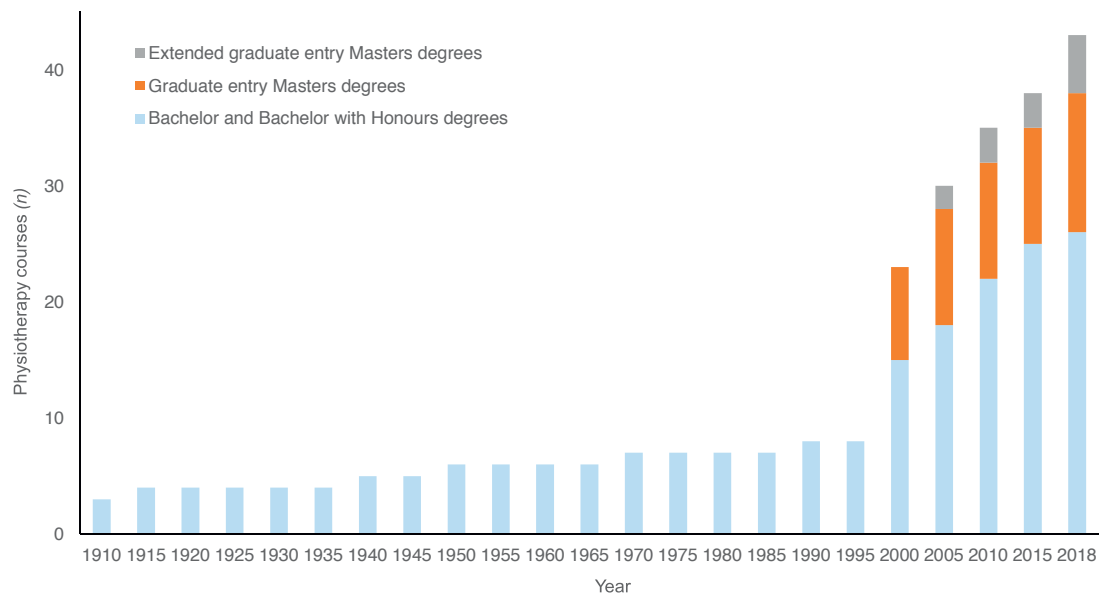


Figure 1. Growth in the number of physiotherapy programs accredited or seeking to be accredited in Australia and New Zealand.^{a,b}

^a When a university offers both a Bachelor degree and a Bachelor with Honours degree, these have been counted as one program because the Honours program is generally nested within the Bachelor degree.

^b Data appear discrepant with those cited in the text because the commencement dates have been binned into 5-year periods.

simulation laboratory, which provides an authentic assessment environment that realistically replicates a client encounter in multiple settings (including hospital, private practice and rehabilitation settings) and covers the breadth of practice.

How far can the boundaries be pushed with simulation-based education? A national, longitudinal randomised controlled trial of American nursing students ($n = 666$) reported no significant differences in pass rates, knowledge and attainment of clinical competence when up to 50% of traditional clinical education in nursing was replaced by simulation immersion. This study also reported no difference in readiness to practise and clinical competence up to 6 months after graduation when the nursing graduates were rated by their managers.² In physiotherapy, Wright and colleagues demonstrated that when an introductory 18-day placement was replaced in totality by a simulation immersion experience, the students who completed the simulation experience attained better competence when assessed using the Assessment of Physiotherapy Practice than those who had previously completed a traditional introductory placement.¹³ This raises the question of whether traditional clinical education in physiotherapy can be replaced by more than 25% simulation.

Simulation has some significant advantages over traditional clinical placements. By allowing deliberate and repeated practice with specific feedback, students can make mistakes without the potential for harm.^{15–17} Further, the learning experience can be standardised for cohorts of students so that they are exposed to scenarios that they may not have the chance to practise on in the clinical setting. The approach also allows flexibility so that scenarios can be adapted to address the needs of individual learners. While simulated patients and high-fidelity mannequins have associated costs of training, equipment and ongoing resourcing,^{9,18,19} there is the potential for simulation-based education to be used to a much greater extent in education. A greater application of simulation-based education will not only allow innovation in times of challenge for clinical placements, but also has the potential to enrich learning through new curricula and pedagogy. Traditional clinical learning experiences are thought to contribute to the development of professional craft knowledge, where professional identity and competence is developed and students learn to make professional decisions in unpredictable and complex situations.²⁰ Simulation-based education can be developed to mimic any situation and to foster all these learnings, even unpredictability, providing a platform that can adapt rapidly as learning needs change.

Deepening our reflection on clinical placement learning, what if the professional craft knowledge gained through traditional clinical placements is in fact at odds with novel learning approaches and emerging practice philosophies? For example, by only having experienced physiotherapists supervising physiotherapy students in the clinical learning environment, perhaps the professional craft knowledge gained from this experience is instilling a perception of professional silos that proponents of inter-professional collaborative practice and healthcare seek to remove. Another focus within this issue is whether clinical education facilities, their educators and staff can demonstrate that the experiences that students gain in the real world are any better than a simulated one.

There is a wealth of other types of simulation yet to be explored in depth. For example, virtual reality is showing early promise in medicine.^{21,22} Peer simulation may provide another method that both supports development of physiotherapy competence to practise, but also deeper learning in empathy and cultural responsiveness as students learn from the client's perspective.²³ Further, the use of simulation for postgraduate training or professional development activities in physiotherapy has commenced in the United Kingdom.²⁴ Perhaps, for example, simulation could provide an immersive experience of the demands of a busy private practice, which is an area where new graduates in Australia appear to be underprepared despite receiving detailed entry-level training.^{25,26}

As the profession explores how far simulation can be used in entry-level physiotherapy education, examination of other methods of clinical education that have the capacity to deal with the increasing number of students while maintaining a rich learning experience has been met with a degree of resistance. For example, research evaluating new models, such as a paired student placement model and the use of supervisors from other professions, has perhaps not been embraced as much as it could, despite demonstrating benefits and similar student performance outcomes.^{27,28} Possible reasons for that resistance could include a perception that these new models threaten client safety, or simple fear of change and a wish to maintain the status quo.

Anecdotally, there are strong opinions in the profession about physiotherapy education that appear to be handed down from generation to generation.³ These opinions are deeply personal and likely based on experiences of one's own education experience. Kegan and Lahey,²⁹ after years of organisational psychology research on individuals and groups, suggested that immunity to

change is not just opposition or inertia, but based on big assumptions and hidden competing commitments woven into the fabric of one's self and, arguably, the physiotherapy profession. Traditional clinical education with direct face-to-face supervision by a physiotherapist is perceived by many to be the gold standard.³⁰ What is needed, as a profession, is to delve deep into the big assumptions and hidden competing interests that propagate this view before resisting the many new models of clinical learning that may be superior. The profession should again consider questioning whether clinical education should remain a substantial component of entry-level physiotherapy degrees, as Crosbie and colleagues did in 2002.³¹ Other health professions, such as pharmacy, undertake most of their experiential learning under limited board registration following completion of their university education. It is worth considering whether this could also apply to physiotherapy. Finally, the profession needs not only strong leadership to research new models, but informal leaders who strategically challenge the prevailing wisdom in their workplace to provoke cultural transformation through leadership that is more localised, diffuse and modest, and less visible than traditional forms of leadership, yet no less valuable.³²

Following on from the initial work into simulation-based education, the profession needs to directly compare different educational designs in methodologically rigorous, randomised trials in order to determine superior educational approaches. These trials need to include economic analyses because, to date, there has been little documentation of the real costs associated with current clinical education approaches. This will provide evidence about which educational methods support more efficient and cost-effective attainment of competence to practise. The research needs to include comparators for traditional clinical learning, where the perception that one model is superior to another appears to be based on anecdotes and historical precedents, rather than on meaningful and robust data.³³ Many educational trials are pre-post design, with limited ability to differentiate the impact of the learning activities on observed changes. Trials also need to be more appropriately designed to minimise potential biases. Finally, as the profession continues to explore different ways of providing and assessing clinical learning, it must be recognised that providing safe and effective physiotherapy graduates is the task of education providers, healthcare agencies and professional bodies, such as the Australian Physiotherapy Council and Australian Physiotherapy Association, working side by side. By working together in strong, respectful partnerships, using multiple forms of leadership, with open and enquiring minds, innovative ways of student learning and service delivery can continue to be explored, researched and subsequently implemented in practice.

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