



CaseWorld™: Interactive, media rich, multidisciplinary case based learning



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ABSTRACT

Nurse educators are challenged to keep up with highly specialised clinical practice, emerging research evidence, regulation requirements and rapidly changing information technology while teaching very large numbers of diverse students in a resource constrained environment. This complex setting provides the context for the CaseWorld project, which aims to simulate those aspects of clinical practice that can be represented by e-learning. This paper describes the development, implementation and evaluation of CaseWorld, a simulated learning environment that supports case based learning. CaseWorld provides nursing students with the opportunity to view unfolding authentic cases presented in a rich multimedia context. The first round of comprehensive summative evaluation of CaseWorld is discussed in the context of earlier formative evaluation, reference group input and strategies for integration of CaseWorld with subject content. This discussion highlights the unique approach taken in this project that involved simultaneous prototype development and large scale implementation, thereby necessitating strong emphasis on staff development, uptake and engagement. The lessons learned provide an interesting basis for further discussion of broad content sharing across disciplines and universities, and the contribution that local innovations can make to global education advancement.

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Introduction

Nurse education is evolving rapidly in response to globalisation, technological change and local factors such as regulation, resources and culture. Access to clinical placements for university students studying in all of the health sciences areas, including nursing, is becoming increasingly difficult to achieve. While high fidelity simulation provides a partial solution to this problem, online simulation using cased based learning, while perhaps not as technically impressive, can also be effective in bringing clinical knowledge and interactions into the university. Furthermore, on-line case based learning can articulate with laboratory based high fidelity simulation providing opportunities for more diverse and extensive interactive learning as well as increasing the emphasis on holistic care.

CaseWorld aims to provide students with access to authentic patient cases that mirror what occurs in the clinical practice setting. Students are challenged to make clinical decisions drawing upon resources (see Fig. 1) such as research evidence, expert clinician interviews, multidisciplinary content, input from other students and selected videos, thereby working with cases to develop critical thinking skills (Popil, 2011). The patient perspective, diverse patient journeys and psychosocial elements are also featured. In this way CaseWorld provides a strong community and patient presence as students can view the patient's home and listen to patient diary content, thereby promoting greater understanding and empathy (Harrison et al., 2012).

CaseWorld provides rich learning experiences in that expert clinicians are identified as case authors and instructed to describe the case that would provide students with the most valuable learning experience. These cases, based on actual events, are modified to maintain anonymity and are enhanced using multimedia so that video and audio can portray more authentic patient presentations. The expert clinicians also participate in video interviews which can facilitate knowledge transfer from busy expert clinicians to very large numbers of students. Overall, this process provides students with access not only to expert clinicians but also to some of the most valuable learning experiences from the practice setting.

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Fig. 1. Overview of case components.

Background

The theoretical basis for CaseWorld involves the integration of situational learning, authentic assessment, critical thinking, case based learning and evidence based practice. CaseWorld aims to provide authentic learning opportunities for both academics and students. Case based learning has been used for a number of years within behavioural and clinical science areas (Thistlethwaite et al., 2012), and applied to disciplines as diverse as Forensic Science, Engineering and the Health Sciences. Case based learning was implemented in the new Bachelor of Nursing curriculum at an Australian University in order to meet the needs of both the changing health and tertiary education environments. A blended curriculum sought to ensure authentic case based learning and contemporary nursing practices was present throughout a rich multimedia context. As Harrison (2012) argues, case studies are one of the most valuable and adaptive teaching methods available to nursing schools. This project focused on authentic clinical cases that included a component of storytelling, patient perception, critical thinking, clinical reasoning and the ability to assist in facilitating independent learning (Harrison et al., 2012; Yousey, 2013).

The initial approach to case based learning development followed the situational learning approach advocated by Kindley (2002, p. 3):

Simulation makes possible 'learning by doing' because it focuses on the learner's performance outcomes in a context that mirrors the real work environment ... and takes into account the complexity of possible interactions across key variables.

Authenticity was enhanced by a high level of clinician and industry engagement, and a strong link to evidence based practice. Case scenarios were enhanced by a number of artefacts which included clinician video interviews, clinician mentor voice-overs, patient perspectives and current clinical documentation.

Kindley's (2002) approach challenges conventional content development with limited use of storyboarding and pre-planning of cases, and instead captures the workplace situation using

multimedia, then works backwards to develop learning objectives that arise from the practice setting. This approach has potential to create tensions with a university generated curriculum, particularly if learning outcomes in the curriculum do not align with those generated from cases or if academic staff do not agree with case content arising from clinical practice. However, the School of Nursing and Midwifery (SoNM) case writing team found that utilising Kindley's (2002) technique was highly effective as specific cases were selected to align with the curriculum and student activities were developed that were congruent with subject learning objectives. For example, since the curriculum emphasised National Health Priorities (Australian Institute of Health and Welfare, 2015) such as diabetes and cancer, cases were developed that addressed these areas. This approach still provided expert clinicians, such as cancer nurses, the opportunity to emphasise those aspects of clinical care that address the highest priority learning needs for students. These cases were then further linked back to curriculum content by specifying student activities related to the case. For example, where learning outcomes across the curriculum specified knowledge of pathophysiology, generic exercises addressing pathophysiology were developed that were easily customised to individual cases.

While the situational approach to case generation promoted authenticity, it also stimulated healthy debate within SoNM about case content and whether clinical care described by expert clinicians reflected current best practice. These debates were addressed by drawing upon evidence based practice, case based learning and critical thinking theory. Case based learning informed the recognition of the value of debate as a stimulus for learning, and rather than changing the cases that caused controversy, activities were developed that examined the cause of debate in detail. To illustrate the point, some staff were concerned that a case which described a patient from a poorer suburb and ethnic background with drug and alcohol problems may have reinforced negative stereotypes. So rather than change the case, activities were developed examining determinants of health, pattern recognition in clinical practice, stereotyping and non-judgemental practice, all of which centred upon the point of debate. Similarly, debates about current practice were used to promote investigation of the research evidence basis for practice and, where necessary, discussion about best practice in the absence of available research evidence. Overall this approach involved a shift to 'learner centred teaching strategies in preference to teacher centred learning' (Sprang, 2010, pp. 6–7). In addition to the application of critical thinking and evidence based practice to problem solve in CaseWorld, technical solutions were also implemented. Wikis were set up for staff peer review in CaseWorld so that staff could enter and build upon peer review feedback for cases at any time. Staff were also encouraged to specifically rewrite case content in the wikis, which will be used to update cases at regular intervals.

CaseWorld and its development processes

The case development process began with an outline of a 'family' of cases. The family made up a set of cases that aimed to demonstrate the complex nature of modern society in South Australia. Social determinants of health assisted to develop the social, environmental and health related perspectives of the case. Members of the family were developed as individuals, in order to demonstrate the patient/client/consumer's journey across the health care continuum, thus ensuring that community, rehabilitation, aged care, acute care, sub-acute and post-acute care were incorporated. Subject writing teams were engaged early in the project and in turn this ensured that the cases reflected the subject

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