

Enhancing nursing students' understanding of threshold concepts through the use of digital stories and a virtual community called 'Wiimali'

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ABSTRACT

Wiimali is a dynamic virtual community developed in 2010 and first implemented into our Bachelor of Nursing (BN) program in 2011. The word Wiimali comes from the Gumiluraai Aboriginal language. Wiimali and the digital stories it comprises were designed to engage nursing students and enhance their understanding of the threshold concepts integral to safe and effective nursing practice.

In this paper we illustrate some of the key features of Wiimali with web links to a virtual tour of the community and a selection of digital stories. We explain how this innovative educational approach has the potential to lead to transformative learning about concepts such as social justice, person-centred care and patient safety.

Consistent feedback about Wiimali attests to the positive impact of this educational approach. Students have commented on how Wiimali caused them to think differently about the concepts of community and social justice; how it brings the health-related problems of community members to life; and how the digital stories enhance their learning about person-centred care and patient safety.

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Introduction

Wiimali is a dynamic virtual community developed in 2010 and first implemented into our Bachelor of Nursing (BN) program in 2011. The word Wiimali comes from the Gumiluraai Aboriginal language; it means *to light a fire*.³ Consistent with the words of William Butler Yeats we believe that *'education is the lighting of a fire, not the filling of a pail'* and it is this premise that underpins our program. Wiimali and the digital stories it comprises were designed to inspire and engage nursing students while enhancing their understanding of the threshold concepts integral to safe and effective nursing practice. In this paper we illustrate some of the key features of Wiimali with web links to a virtual tour of the

community and a selection of digital stories. We explain how this innovative educational approach has the potential to lead to transformative learning about concepts such as social justice, person-centred care and patient safety. We conclude by providing examples of student evaluative feedback about this educational approach.

Background

Threshold concepts and transformative learning

Wiimali was designed to bring complex and somewhat challenging health and sociological concepts to life. These 'threshold concepts' are integrated throughout our BN curriculum and an understanding of them is pivotal to students' successful transition from lay person to beginning nurse. Threshold concepts are explained by Meyer and Land (2003, p.1) as:

... akin to a portal, opening up a new and previously inaccessible way of thinking about something ... [they] represent a transformed way of understanding, interpreting, or viewing something without which the learner cannot progress. As a

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³ We have been given permission to use this word by the Gumiluraai people.

consequence of comprehending a threshold concept there may thus be a transformed internal view of subject matter, subject landscape, or even world view. Such a transformed view or landscape may represent how people ‘think’ in a particular discipline (or more generally).

Nursing students embarking on the journey of higher education are often concrete thinkers with firmly established ideas about the nature of nursing. The prevalence of stereotypical media images of nurses working in exciting, technology rich, fast-paced acute care environments, alongside the limited attention paid to the less obvious roles of nurses working with people who are aged, mentally ill, disabled or experiencing chronic illnesses, can create preconceptions about the roles and responsibilities of contemporary nurses that are difficult to overcome (Beattie et al., 2014; Porter et al., 2009). These narrow images of nurses do not foreground the philosophy of nursing or do justice to the disciplinary knowledge required to successfully transition from lay person to nurse (King et al., 2007). Added to this, students’ failure to appreciate the true meaning of nursing can sometimes result in initial educational experiences that leave them disillusioned with the dichotomy between what they thought nurses and nursing were and what they actually are.

Academic staff sometimes encounter difficulties in bringing threshold concepts such as social justice, patient safety and person-centred care to life (Steven et al., 2014; Steenberg et al., 2013); and in making them meaningful and relevant to an increasingly heterogeneous cohort of students with diverse learning needs, abilities, life experiences, expectations, and learning styles. The values and philosophies integral to nursing are tacit and often poorly articulated or overlooked amidst nursing curricula that are content dense. Teaching threshold concepts in ways that are illuminative and transformative can therefore be challenging and requires creative approaches that engage, inspire and resonate with students. Further, students must be able to see the immediate relevance of their learning to practice and to their own developing image of nursing. These challenges are not new however, nor are they specific to nursing.

As Meyer and Land (2003) note, threshold concepts are often troublesome for learning and teaching because they may seem to be conceptually difficult, complex, tacit, foreign, and sometimes ritualised. Threshold concepts have the following characteristics; they are:

- Reflective of and essential to the way of thinking in a particular discipline
- Denote significant concepts (or webs of related concepts and principles)
- Require transformation of existing ways of knowing, understanding, valuing and enacting
- May be irreversible (unlikely to be unlearned)
- Integrative of other aspects of subject matter and knowledge (Meyer and Land, 2003).

It was against this background that Wiimali was conceptualised as a way of immersing nursing students in the art and science of nursing, emphasising essential professional concepts, facilitating professional transformation, and challenging students to ‘think like a nurse’. We were convinced that a series of unfolding and interactive digital stories structured within a virtual community had the potential to awaken students to important contemporary healthcare issues and to inspire them to think critically about the meaning of nursing and the impact they can make as health professionals. We also believed that despite the diversity of BN

students, stories were a medium that would appeal to and engage the vast majority.

Virtual communities

Virtual communities, a relatively new learning strategy in nursing education, are fictional web-based communities formed through an aggregate of fictional character and community stories (Carlson-Sabelli et al., 2011). They are often founded on constructivist approaches with visual and auditory media inviting exploration and discovery. Virtual communities simulate a real community in a way that creates a sense of authenticity and provide opportunities for engagement with community members, health professionals and healthcare services. Virtual communities are a way of capitalising on what Benner et al. (2010) refer to as the “power of context” (p. 145). Recent examples of virtual communities include The Neighbourhood (Giddens et al., 2010), which features 34 characters and 6 nurses who work within health care agencies in the United States; Mirror Lake (Curran et al., 2009) which contains 62 households, a hospital and a retirement centre in Canada; and Stillwell a virtual community of 60 characters living in the United Kingdom (Walsh and Crumble, 2011). Evaluation of these communities is generally positive (Curran et al., 2009; Giddens et al., 2010; Walsh and Crumble, 2011), with health professional students valuing the narrative pedagogy and experiential learning opportunities. However, the emphasis in a number of these virtual communities tends to be the nursing activities occurring in healthcare settings without a parallel consideration of the community as a social determinant of health. Additionally, evidence of curricular integration is limited with most of the communities used within single courses over a relatively short period of time or as extracurricular learning activities. Importantly, many of the virtual communities described in the literature focus on acquisition of clinical skills and knowledge and attention to deep learning about broader health and social concepts is often limited.

Digital stories

Digital stories are the **modern expression of the ancient art of storytelling** (Ironsides, 2013). They combine narrative pedagogy through the use of videos, audio, voice, text, still images and music. Unfolding digital stories promote a strong emotional resonance and feelings of empathy and compassion (Haigh and Hardy, 2011) conveying tacit and sometimes unappreciated elements of practice (Swap et al., 2001). They are multidimensional, enabling exploration of reality from different perspectives. Digital stories are reflective, creative and value laden, revealing something important about the human condition (Haigh and Hardy, 2011). They provide learners with a powerful and effective way to learn, remember and reflect. Indeed, there is compelling research indicating that adults who are presented with a story linked to a series of facts retain significantly more than those presented with facts alone (Brown et al., 2005).

Wiimali

Wiimali is a virtual community located in New South Wales, Australia. While the community is fictitious the demographic indicators are representative of the diversity of a semi-metropolitan context similar to the region surrounding our university campus. Wiimali is comprised of an interactive map with over 80 digital stories, each mapped to curriculum learning outcomes and unfolding over the three years of the nursing program. The community was developed in a consultative way, inclusive of the perspectives of academics, health professionals and health care

consumers. Wiimali is integrated into specific courses each semester with direct links to weekly learning outcomes. Students explore different aspects of Wiimali prior to tutorials with guided reflection questions focusing their attention on course concepts and content. During face-to-face tutorials Wiimali is accessed by tutors and the digital stories provide the impetus for discussion and debate.

The digital stories developed for Wiimali profile the community, illustrate the social determinants of health, and allow the voices of residents, patients, carers and health professionals to be heard. Importantly, students' attention becomes focused on threshold concepts such social justice, person-centred care and patient safety through the evocative, meaningful and sometimes challenging stories.

Equity and access

To ensure equity for all students we designed and developed Wiimali using international web programming standards to maximise accessibility and compatibility across all computers and mobile devices. Hypertext Markup Language (HTML) was used to lay out headings, text and links. Additionally, access to Wiimali is provided without cost to the student and without the requirement for specific software or hardware. Students can access Wiimali and revisit the digital stories at any time during their period of enrolment.

Curriculum integration – Year 1

Students are introduced to Wiimali in their first semester of enrolment where it forms the stimulus for a core primary health care course. The emphasis at this stage is on exploring the community, its history, demographic profile, resources, problems and assets. In Australia, education about primary health is not keeping pace with reform agendas that promote expanded roles for nurses in illness prevention and health promotion (Keleher et al., 2010). To achieve the aims of current reforms, students need a clear understanding of the conceptual foundations of primary health and the valuable contribution made by nurses working in community settings (Day, Levett-Jones & Taylor, 2014).

Primary health care is underpinned by the principles of social justice, empowerment, community participation and equity (Keleher, 2001; World Health Organization, 1978). For this reason the threshold concept of social justice is the main focus for learning at this stage with marginalisation, inequity, stigma, and the social determinants of health also emphasised. Implied in the concept of social justice is a focus on the underlying reasons for unequal distribution of resources (Day, Levett-Jones & Taylor, 2014). The World Health Organization (2012) argues that differences in social determinants of health are the basis for unfair health inequalities; Wiimali is therefore premised on the belief that the social environment [community] into which people are born, live and work is the single most important determinant of health (World Health Organization, 2008).

Students begin their exploration of Wiimali with a virtual tour that provides a sense of what it is like to live in the community and introduces them to where people live, work, learn, and how they spend their leisure time. The narrator describes the history of the community, the different cultural groups who live there, and the impact of changing population demographics, explaining that: "Wiimali's poor health outcomes are reflected in high levels of mortality, disease and health risk factors. These are because of limited access to health-care services and staff and more jobs with higher risks, such as farming and mining". Students listen to the community radio news reports and read the Chronicle, an

electronic newspaper that is delivered weekly. These media announcements are tailored to the focus of the weekly tutorial activities and create a sense that the community is dynamic and evolving over time. The Wiimali Council Chambers provides further information about the demographic profile of the community. These resources help to build a deepening understanding of the community and the complexity of the social and health issues encountered by its residents. Students then explore the community via an interactive map.

Students 'visit' the Migrant and Refugee centre and the Aboriginal Medical Service; they then listen to Auntie Sandra, an Aboriginal elder, share her concerns about poor health outcomes for Aboriginal people. These experiences create a beginning understanding of the importance of cultural competence and its links with person-centred care.

The workplace health and safety nurse at the Wiimali coal mine talks to students about how her work impacts the health of the miners and the community nurse describes some of the social issues faced by the residents of the Wiimali Riverside Caravan Park. She explains how many experience multiple layers of disadvantage including poverty, unemployment, illiteracy, drug and alcohol use, domestic and family violence, and/or social isolation. In each digital story students hear the voices and stories of real people in real contexts.

Wiimali's constructivist and experiential approach causes students to reflect on and critically analyse their assumptions and beliefs about stigma, social inequity, cultural diversity, and the social determinants of health. A deeper understanding is afforded by access to a series of Blogs written by residents and health professionals from Wiimali. Students can participate in the online discussions and share their changing views and deepening perspectives.

From second semester onwards students begin to '**zoom in**' and take a closer look at Wiimali as they meet some of the residents and learn about their health issues and psychosocial needs. The threshold concept of person-centred care provides the foundation for learning with video and audio files used to introduce the **person** who is or will be the recipient of care. Each person's life history is profiled to enhance cognitive and affective engagement and to encourage students to view their practice as meaningful interactions with a person during a time in their illness (or life) journey rather than simply an episode of care (Image 1).

Students meet Eileen Poole who shares her life history through a series of digital stories. Students follow her healthcare journey as she visits the medical centre and community pharmacy and is subsequently admitted to hospital as a result of a medication error. The unfolding digital stories provide a juxtaposition of both positive and negative examples of health professionals' therapeutic, intraprofessional and interprofessional communication and the link between person-centred care, communication and patient safety is illustrated. In Ward 1 of Wiimali Hospital (see Images 2 and 3) students also meet Margaret, Bill and George, and through a series of interactive learning experiences gain an understanding of their social and medical history and learn about the direct relationship between person-centred care and safe medication practices (Bolster and Manias, 2010).

Year 2

In second year of the program students meet Cyril Smith, an older man diagnosed with colorectal cancer. Students follow his journey from admission, through surgery, clinical deterioration, recovery and discharge. The threshold concepts that are introduced at this stage are patient safety with particular attention to recognition and management of the deteriorating patient. Students



Image 1. Wiimali interactive map.

engage with a series of interactive scenarios (Hoffman et al., 2010) based upon Levett-Jones' (2013) clinical reasoning model and develop an understanding of the pivotal relationship between clinical reasoning and patient safety.

The threshold concept of mind-body-spirit connection is also the focus of second year. Students meet Richard, one of Wiimali's farmers who, anxious and depressed by droughts and the constant threat of losing his farm, attempts suicide. He is admitted to the mental health unit and, via a series of digital stories, students learn from experienced mental health nurses how to provide holistic and person-centred care.

The importance of mind-body-spirit connection and person-centred care is revisited and therapeutic communication illustrated in the series of digital stories that focus on Reg, his wife Jean and their two adult children. Reg is an older man with dementia

being cared for by Jean. The situation for this couple becomes increasingly challenging as Reg's dementia worsens. When Jean falls and fractures her femur she is admitted to an acute care hospital where, due to post-operative complications, she dies. Reg is unable to be cared for at home and is transferred to a residential aged care facility. Students learn to focus, not only on the unfolding clinical situation, but also issues of spirituality, death, grief, loss and changing family dynamics. In doing so students also reflect on their own mortality, feelings, assumptions and values.

Year 3

Third year students learn about disaster management when Wiimali is ravaged by a flood. They also gain an understanding of critical care nursing in the Emergency Department of Wiimali

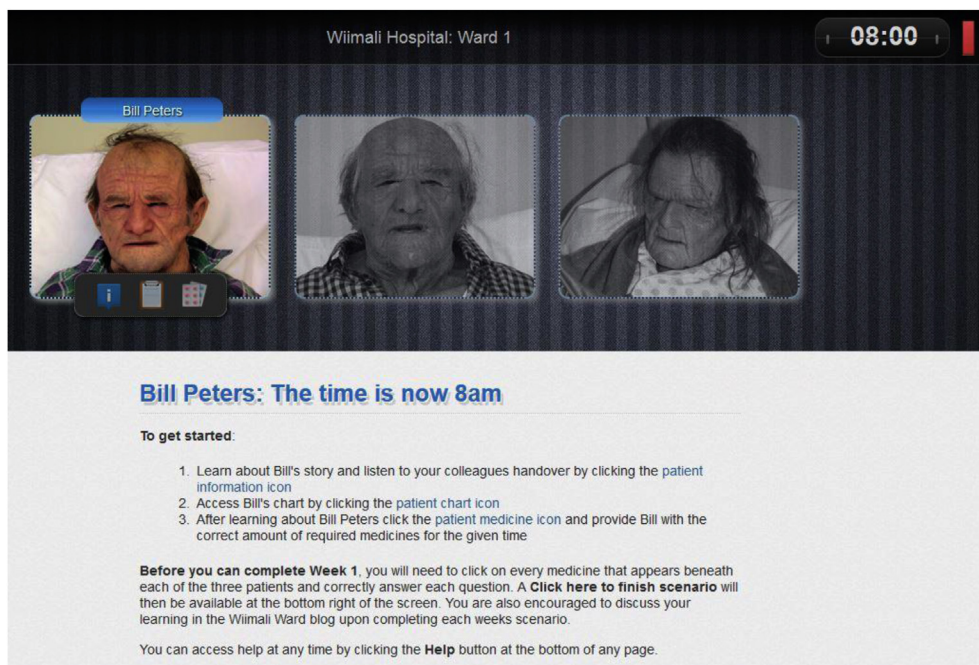


Image 2. Margaret, Bill and George – Three of the patients in Wiimali Hospital Ward 1.

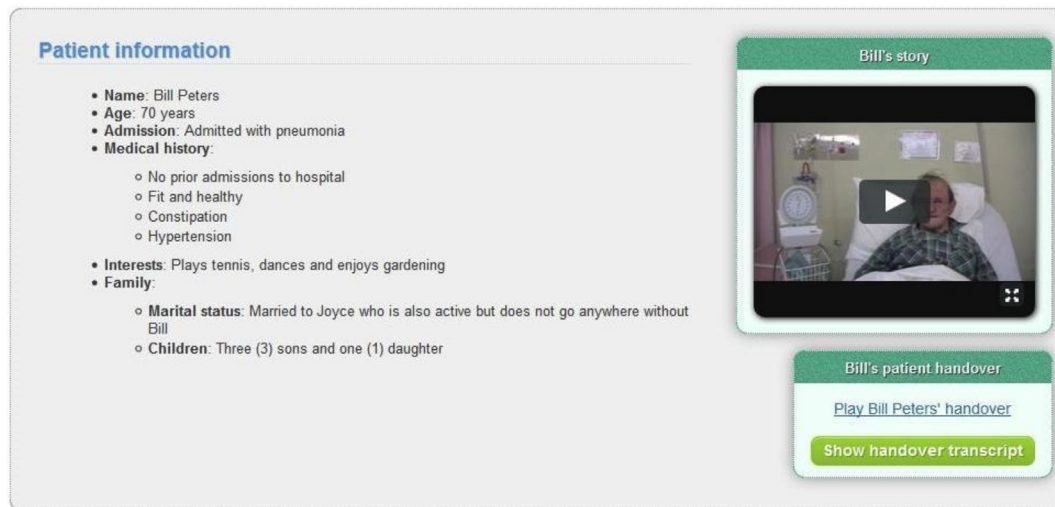


Image 3. A closer look at Bill Peters.

hospital when they are involved in the care of a child who has drowned in the rising flood waters of the Gubiy River and the casualties of a multiple vehicle accident at a known 'black spot'. The threshold concepts introduced in previous years are once again reinforced. Issues related to primary health care are discussed as students consider factors that may have prevented the drowning (for example signs, fences and community education) and the car accident (for example the provision of traffic lights and education about teenage drivers and alcohol abuse). Person-centred care and patient safety are also revisited and discussed in relation to the unfolding digital stories.

Wiimali unfolds over the three years of the BN degree and what we have described here are just a few of the threshold concepts that inform the digital stories and the virtual community. Examples of some of the other digital stories can be accessed at www.wiimali.com.au.

Feedback about Wiimali

The extent to which Wiimali has impacted students' world view or had a transformative effect on their understanding of the threshold concepts is difficult to ascertain. However, anecdotal feedback from students has been positive overall and has allowed us to review, refine and improve the quality of Wiimali resources and delivery over time. Additionally, routine course evaluations indicate that during the period 2010–2013, 78–90% of students either agreed or strongly agreed with the following statements:

- Wiimali caused me to think differently about the concepts of community and social justice
- Wiimali brought to life the health-related problems of community members
- The people profiled in Wiimali made learning more interesting
- The story-telling approach used in Wiimali was useful to my learning

Students also provided the following free-text comments:

The videos brought the community and its people to life

Being interactive made a change from simply reading information

I loved the story-telling approach used in Wiimali

The most beneficial part was having the interactive map

I loved reading the newspaper and listening to the radio each week

Wiimali has opened my eyes to Aboriginal cultures and issues related to refugees ... things I thought I knew about ... but I was so wrong

Meeting different people, engaging with them, and listening to their stories over the last three years has been amazing

I loved the mental health stories

Cyril's story was unforgettable

I really liked how the stories developed over the semester – e.g. Eileen Poole's story where we see her at the GP, then the pharmacy, then in hospital

It seemed real – it has made me more determined to be involved in Aboriginal health

Wow – Wiimali helped me see that there are so many different nursing roles.

While most of the feedback about Wiimali has been positive, students also identified limitations and areas for improvement, for example:

It had quite a lot of information and at busy semester times it was difficult to spend a lot of time using the site.

I enjoyed it, just found it hard to engage on a regular basis because of the workload in the rest of the course.

When tutors did not use it or relate to it in class Wiimali became irrelevant and more of a problem than a help.

Conclusion

Nursing academics are continually challenged to create new ways of teaching which are contemporary, authentic and engaging for students from diverse backgrounds and with different world views. At the same time learning innovations need to be based on sound educational theory, and support the integration of threshold concepts to enhance deep learning. The development and implementation of Wiimali sought to address these challenges. A virtual community that supports transformative learning about issues such as social justice, person-centred care and patient safety and

that also reflects the social determinants of health is an important educational development. Further dialogue about innovative ways to enhance nursing students' understanding of threshold concepts and research into the effectiveness of these approaches are needed to inform ongoing curricula improvements. Wiimali has proven to be an effective educational approach and one that reinforces students' understanding that education is for improving the lives of others and for leaving your community and world better than you found it ~ Marian Wright Edelman, Civil rights activist.

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