



Teaching in virtual space: *Second Life* simulation for haemorrhage management

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Second Life is an example of a 3-D virtual reality environment that can be used to create simulated learning experiences. Users access this environment from the internet via an avatar that interacts with others and the environment. Simulating patient care scenarios in a realistic environment is an increasingly popular method to prepare health professionals to care for patients. While most simulation training occurs in a live simulation environment such as a laboratory, there has also been an increase in the use of virtual reality. This interactive session demonstrates the use of the virtual world, *Second Life* for teaching. The demonstration mirrors the stages used for pilot use of *Second Life* for teaching postpartum haemorrhage that took place earlier this year with undergraduate nursing students and lecturers from New Zealand and the USA. The experiences and key lessons learnt from the evaluation of the pilot are shared.

Keywords: 3-D virtual world, simulation, MUVE (Multi-User Virtual Environment)

Introduction

E-learning refers to the use of the Internet to support learning (Rosenburg, 2001). The more recent availability of Web 2.0 applications allow the Internet to be used in ways that permit more interactivity and social networking (Maag, 2005). *Second Life* is an option within the e-learning spectrum that utilises Web 2.0 technology. *Second Life* is an example of a 3-D virtual reality environment that can be used to create simulated learning experiences. Within *Second Life* social networking is achieved by having an “immersive environment where users interact and construct knowledge” (Skiba, 2007, p. 156). Individuals interact using a 3D “graphical self-representation” called an avatar (Boulos, Hetherington, & Wheeler, 2007, p. 233). Within *Second Life* teachers can create environments such as hospital settings and patients where students, using their avatars, can interact. As *Second Life* has capabilities for unlimited building in a 3-D environment and synchronous interpersonal interaction, there is potential to create and conduct simulation training in *Second Life* for educational purposes.

Simulating patient care scenarios in a realistic environment is an increasingly popular method to prepare health professionals to care for patients. While most simulation training occurs in a live simulation environment such as a laboratory, there has also been an increase in the use of virtual reality. As it is not possible, nor desirable for all learning to take place with a real patient, simulation that mimics the essential features of real-life is an option that can take advantage of new and emerging technologies and provide learning in a safe environment. Simulation has traditionally been provided in practice laboratories using a manikin as the patient (Medley & Horne, 2005). While some literature discusses the health educational uses of *Second Life* in positive terms (Boulos et al., 2007; Skiba, 2007) citing its ability to support interaction and collaborative learning there is little research about actual projects.

This interactive session demonstrates outcomes of a collaborative project between the University of Auckland (New Zealand) and Boise State University (Idaho, USA). Collaboration allowed nurse teachers to support each other, and then together support students in a virtual learning environment using a patient based scenario.

Context

This interactive session demonstrated the use of the virtual world, *Second Life* for teaching. The demonstration illustrated the stages used for pilot use of *Second Life* for teaching postpartum haemorrhage that took place earlier in 2009 with undergraduate nursing students and lecturers from New Zealand and the USA.

This project was based around a simulation of a woman having a postpartum haemorrhage. A scenario had been developed which can be used in a simulated exercise in any medium and it was proposed that this exercise be available to students in a practice laboratory in a real simulation or as a *Second Life* virtual simulation. The postpartum haemorrhage scenario was developed and refined for the Boise State University Department of Nursing Simulation Program. The focus of the scenario is on recognising abnormal presentation in a postpartum assessment, nursing interventions for haemorrhage, and communication among health care professionals. The scenario includes pre-simulation preparation for the student, participation in the simulated scenario (either in real or virtual world), and a faculty guided debriefing. Ethics approval was obtained from each participating organisation.

Interactive session

The expected outcomes of the interactive session were for the audience at Ascilite 2009 to:

- Understand the stages that can underpin development of a teaching simulation.
- Observe or participate in *Second Life* teaching, following the stages.
- Identify actual and potential issues for teachers and students and with using the technology.

The level of involvement of the audience was thought likely to depend on their expertise in *Second Life*. Attending the interactive session in the presenting room allowed those with no experience to observe while those with avatars could either observe in *Second Life* or those who wished to be more active could volunteer to be students or teachers.

What we learnt from our *Second Life* pilot

The outcomes of our collaborative project where we piloted the use of *Second Life* to provide a virtual world to teach postpartum haemorrhage management can be considered from three perspectives: those of students, the lecturers, and technological aspects. A summary of some of the key points are presented in Table 1, as Highlights of Lessons Learnt.

Table 1: Highlights of lessons learnt

Students
Students enjoyed the experience. "Was weird and fun"
Scenario "seemed real"; "We had to think and act quickly".
Evidence of learning. "Taught me about responding and thinking on my feet"
Lecturers
Orientation to <i>Second Life</i> for students needed
Pre-simulation preparation for students provided the knowledge to act in the simulation
Collaborative approach worked well to support lecturers
Technology
Creating the clinic and props was time intensive
Technological problems likely to occur – testing necessary
Iterative approach useful as allows ongoing improvements and enhancements

Publishing from this project

Connor, K., Veltman, M., Honey, M.L.L. & Diener, B.S. Simulated learning scenarios in a lab or a virtual world: Is the learning comparable?, *Western Institute of Nursing Communicative Nursing Research Conference*, Salt Lake City, Utah, USA, April 22-25, 2009.

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<http://www.ascilite.org.au/conferences/auckland09/procs/honey-interactive-session.pdf>.

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