3D Virtual Learning Case Study

Investigating the use of a 3D simulation environment to enhance student communication skills and interdisciplinary learning across three healthcare disciplines

Institution
Royal Melbourne Institute of Technology/University of South Australia

Course/Subject
RADI1143

Contact
Jenny Sim, Jenni James, Sheila Scutter (coordinators)

Prerequisite Skills
No prerequisite skill in using 3D virtual learning environments assumed

Background
This project investigated the engagement, student experience and flexibility of using a 3D virtual world to simulate the patient history taking process.

Students in Health Science Undergraduate programs undertake significant periods of clinical placement. Skills to be learnt and practiced on clinical placements include subjective (history taking) and objective (physical) examination of the patient as well as practical skills specific to the particular program (for example, in radiography, positioning the patient for an x-ray examination). The skill of taking a patient history is complex, involving interaction with the patient in a way that is sensitive to the needs of the patient, being responsive to the patient and determining information essential for the appropriate management of the patient. Many students find the taking of a patient history a daunting task, particularly with patients who are very ill or distressed. However this is an essential skill for health practitioners. Effective communication skill is one of the core clinical attributes for healthcare practitioners. As part of undergraduate education, assisting students to develop good communication skill with patients is vital in helping students in their transition to clinical workplaces.

In addition, healthcare worldwide is requiring practitioners from different professions to work together as a single entity. Learning and working together as part of an interdisciplinary healthcare team are professional attributes that are assuming increasing importance for employers (Braithwaite & Travaglia, 2005; Health Workforce Advisory Committee, 2003). It is now a common expectation that education and training of health care professionals will include opportunities to learn with other professionals in order to prepare them for their clinical responsibilities (UK Department of Health; 2001, Institute of Medicine, 2003).

Thus, as part of promoting interdisciplinary learning in undergraduate education three disciplines (Discipline of Nursing and Midwifery, Discipline of Chiropractic and Discipline of Medical Radiations) worked together to pilot a module on Communication in Healthcare for RMIT undergraduate health sciences students.
This project provides a way to enable students to focus on the skill of taking a patient history in a risk-free environment for both the student and the patient. Working with a virtual patient enables the student to practice different approaches to history taking out of the clinical context, thus preparing them better for actual clinical placement.

The module will be designed according to the learning and teaching theories of situated learning, constructivism, reflective learning and Biggs constructive alignment.

Quality learning is about making situated learning possible (Laurillard, 2002). Situated learning involves engaging “learners in tasks that reflect practices encountered in professional work place settings” (Herrington & Bunker, 2002, p. 307). Hence, the simulation of clinical settings in the virtual world will provide the type of authentic and experiential learning that are critical to student learning. Such form of experiential learning is invaluable as students do not have to worry about repercussions of their actions due to their lack of experience and encounters with patients.

By adopting the constructivist approach to learning, learners are required to integrate past experiences with current experiences in order to make sense of their own learning (Marlowe & Page, 2005). Here, students are required to integrate their acquired theoretical knowledge in the context of clinical scenarios. In the process, deeper learning results and new knowledge is built on prior knowledge, needs and beliefs (Brophy, 2002a; Collison, Elbaum, Haavind, & Tinker, 2000; Mayes, 2001; Morphew, 2000).

And as knowledge and skills are best learned by reflecting on how they are applied in everyday situations (Ghaye & Lillyman, 2000), the inclusion of ongoing reflective activities and towards the end of the semester will further enhance student learning. Finally, the principle of alignment is achieved by assessing how effectively students perform the learning activities of communicating and interacting with patients in Second Life, (such as verbal communication, active listening, identifying non-verbal cues from patients, history taking and problem solving skills), which in turn form the aims and outcomes of the module.

Description

Literature indicates that simulated learning environment such as Second Life, when used appropriately, enhances student learning. This is due to the interactive simulations and virtual environment which enable students to create and reshape learning in a personal meaningful way (Harper and Wright, 2002). This project uses Reaction Grid as the platform for student to learn the basic communication skills in a safe, supportive and simulated learning environment.

This pilot module was conducted in second semester 2010. The module was offered in three separate components but linked together via a single patient journey. Students enrolled in the Discipline of Nursing and Midwifery participated via the online mode while students from both the Discipline of Chiropractic and Medical Radiations will be offered the blended mode of learning.
All students will arrive at the Island Polyclinic which houses a range of health services including, pharmacy, midwifery consulting rooms, chiropractic clinics, and diagnostic imaging.

For each program, students will start off with observing a role play in their respective discipline and reflecting on the interactions and communication between the healthcare practitioner and patient (Activity 2). They will then conduct the role play, with one assuming the role of the health practitioner and another, the patient and vice versa. As the sessions will be recorded, students may chose to do as many practice sessions as they wish before submitting the role play for lecturer and peer feedback (Activity 3). Students are then required to complete a reflective assignment, first reflecting on their own role play (Activity 4.1) and then reflecting on the role plays of their peers (Activity 4.2). The final activity involves participating in the module evaluation (Activity 5). See Table 1: Research timeline.

**Aims and Objectives**

The study aims to:

- investigate the use of Second Life as a learning platform for health science students to develop effective communication skills with patients;
- promote interdisciplinary learning and understanding amongst healthcare students;
- assist staff in their professional development in the adoption of innovative Web 3.0 technology as part of their learning and teaching strategy.

To this end, the overarching aim of the pilot module is to provide students with opportunities to develop the basic communication skills that are essential for healthcare practitioners. These include but are not limited to:

- effective listening such as active/passive listening and questioning skills;
- nonverbal communication skills;
- verbal communication skills;
- history taking skills;
- problem solving skills;
- strategies in assisting patients to cope with anxiety; and working as a healthcare team in an interdisciplinary manner.

**Significance of the study**

This project will:

- enhance student learning in the context of communication and patient care;
- assist student in their transition from university learning to clinical workplace;
- promote interdisciplinary learning, understanding and collaboration amongst health sciences students across three disciplines: Chiropractic, Medical Imaging, Nursing and midwifery;
- contribute to our understanding of Second Life as a learning and teaching tool for health sciences students in the context of patient care communication; and
- enhance staff development in the use of Second life as an experiential form of learning;

This study serves as the pilot study. If successful, this study will provide students with an alternate and effective form of experiential learning of the basic communication
skills that are essential for healthcare practitioners. The preliminary data obtained will provide the foundation necessary for the expansion and promotion of interdisciplinary learning across the health sciences disciplines (i.e. between the School of Health Sciences and School of Medical Sciences).

The Mammography, Lactation and Chiropractic Clinics used by Health Science Students

A radiographer and a patient during history-taking in the mammography clinic.

Scenario

For Medical Radiation Students. You will be undertaking a non scripted patient history of a “mother” with a baby who is having breast feeding issues. The patient has been referred to you for mammographic examination due to a lump in her breast. Based on your lectures on mammographic procedures and your recommended readings on patient care, you are required to role play the history taking interactions that occur between the mammographer and the patient prior to the conduct of the mammographic examination. This is a task centered on experimentation, interaction and learning and is not, by nature primarily one of assessment. “Successful” completion of this task will lay more in the engagement with it,
than the “right answers”. Completing this task will not so much be focused on the outcome (video clip) you produce as on the process you go through to get there and the subsequent reflection that follows.

It is hoped that in the near future a 3D virtual world will provide great flexibly for students to interact and conduct course work, without the need for a physical presence, especially for those students without an on-campus presence.

Role playing as Practitioner AND Patient will enable you to have some insight into the experiences of a patient, is hoped to increase efficiency, understanding and retention of that knowledge. It is also hoped that this would result in less “work” and an emphasis on learning rather than assessment.

It is also hoped that the task is an enjoyable one…

**Assessment**

**Student learning activities and timeline**

<table>
<thead>
<tr>
<th>3D simulated learning activities</th>
<th>Resources</th>
<th>Assessment (25%)</th>
<th>Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 1: Logging on and familiarising with the virtual environment</td>
<td>• Document: Read me first</td>
<td>Hurdle</td>
<td>Wk 4 i.e. 09/08/10</td>
</tr>
<tr>
<td>Activity 2: Observing and reflecting on our role play</td>
<td>• Role play clip</td>
<td>10%</td>
<td>Wk 5 i.e. 16/08/10</td>
</tr>
<tr>
<td>Activity 3: Getting into action: Your Role play</td>
<td>• Essential readings</td>
<td>10%</td>
<td>End of Wk 8 i.e. 17/09/10</td>
</tr>
<tr>
<td>Activity 4: Reflecting on your learning (written)</td>
<td>• Essential readings</td>
<td>Hurdle (5%)</td>
<td>End of Wk 10 i.e. 01/10/10</td>
</tr>
<tr>
<td>• Act 4.1: Reflecting on your own role play</td>
<td>• Self-directed readings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Act 4.2: Reflecting on your peer’s role play</td>
<td>• Essential readings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 5: Module evaluation*</td>
<td>• Hurdle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Act 5.1: Reflecting on 3D learning</td>
<td>• Hurdle</td>
<td></td>
<td>End of Sem Two 2010</td>
</tr>
<tr>
<td>• Act 5.2: Online survey</td>
<td>• End of Sem Two 2010</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Module evaluation: students will also be invited to participate in a focus group discussion (voluntary participation).

**About Activity 2 and Activity 4...**

In terms of reflecting on the two role plays, you need to substantiate your critique and reflection by drawing upon relevant references from the literature.

For instance, if the patient responded with “I am so scared! It is the big ‘C’, isn’t it? I am going to lose my hair!” Your critique should therefore include literature on patient’s emotions and the appropriate strategies that the mammographer may/should adopt to support the patient.

**Activity 4.2**
Select one of your peer’s group role play and likewise reflect on their role play. Highlight the main issues covered but your focus here should be on issues that have not been covered in your own role play.

Activity 2 word limit: 800 words (minimum)
Activity 4 word limit (i.e. Activity 4.1 & 4.2): 800 words (minimum)

Activity 5.1
As part of evaluating if this form of 3D simulated learning is useful in enhancing your understanding and assisting you in your preparation for clinical practice, use the reflection prompts provided below to assist you in your reflection.

Reflect on the use and effectiveness of this 3D simulation tool as a learning strategy for patient communication in mammographic setting. You may find it useful to bear the following reflection prompts in mind while you are working your way through the learning activities.

- **Flexibility of learning**: How important do you rate the ability to complete the activity at your convenience and as often as you like?
- **Burden**: Did the task feel as arduous as producing a word count type of assignment or essay?
- **Technology**: Did the technology requirements in any way deter/distract you from your learning?
- **Learning value**: Did this learning activity enhance your learning and understanding of the topic?
- **Engagement**: Did the 3D simulation grab your attention? i.e. was the level of interactivity sufficient to cause you to want to continue with this form of learning?
- **Applications**:
  - Do you think this form of 3D simulation is useful in preparing you for your interactions with patients in clinical placement?
  - Do you think this form of 3D simulation could be useful for preparing patients for procedures? For instance, if they could watch a simulation before they undergo the procedure?
- **Open ended comments**: Please feel free to provide any other comments that have occurred to you during this process.

Related material
Clinical scenario: This module follows the journey of a patient who is experiencing difficulty in breast feeding her baby. The patient was first seen by the Lactation Consultant, who then referred the patient to the Chiropractic clinic and the Medical Imaging department.

**Medical Imaging**: As the role play scenario was in the context of mammographic setting, the module was embedded in RADI 1143, Medical Imaging methods. This is because one of the components of this course is on mammographic examination. Students will therefore be able to apply their theoretical knowledge, especially in the context of patient care, in this module.

**Assessment**: Participation in this module will be optional. Currently, all students have to undertake a research proposal assignment, which form 25% of the course assessment. For
this study, students had the option of either doing the research proposal assignment or learning in Reaction Grid. The module formed 25% of the assessment of the course.

Resources for students

3D Simulated Patient History Taking

CD contents:

For PC & Mac (in their respective folders)
• Skype
• Imprudence
• Recording software

Documents
• This document (Read me first)
• Learning objectives
• Referral letter from the Lactation Consultant
• Essential readings for RADI1143: 3D simulated learning on mammography
• Mammographic screening history
• Plain Language Statement Consent Form

Install Skype for your operating system (from the net or the copy on this CD) if you have not already done so.

Sign up for a SKYPE account if you do not have one already.
Sign up for a ReactionGrid account.

Use your student email address as the email

For identification purposes, use your first real name and a fictitious last name as your user name (listed as last name and first name on the registration page).

As this is considered a university class venue, the same dress codes apply to your avatar as do yourself in a physical class. Due to the nature of the simulation it is recommended that you choose one of the more “formal” attire sets for your given gender.

1. Download (On the CD) and install the Imprudence viewer for your operating system http://imprudenceviewer.org/wiki/Downloads
2. Run the program
3. On the splash screen, click the GRIDS button
4. On the pop-up window, click the GRIDS tab
5. At the top of the box, click ADD (we are adding Reaction Grid)
6. For LOGIN URI enter: http://reactiongrid.com:8008/
7. For PLATFORM choose: OpenSim
8. Try: Get Grid Info if it doesn't autofill fields:
9. For GRID NICKNAME enter: **reactiongrid**
10. For GRID NAME enter: **ReactionGrid**
11. Click **Apply**
12. Click the **DEFAULT** button at the top of the box
13. Click the **OK** button to close the dialog, and the ReactionGrid login page should appear.

**14. You're now ready to enter your user name and password.**

**RECORDING**
There are two ways in which you can record your 3D simulation role play.

Option One uses ‘Debut’ (free software) which allows both screen capture and audio recording.

Option Two uses Skype to record audio while still using ‘Debut’ or software of your own choice for screen capture.

**Option One**
To download free video capture, go to: [http://www.nchsoftware.com/capture/index.html](http://www.nchsoftware.com/capture/index.html)

1. Click on the third icon from the left ‘Record your computer screen’
2. Download the software ‘debutsetup.exe’
3. On the dialog box ‘Debut Video Capture Software-Related programs and extras’
   Click on ‘Select All’ and then click ‘Finish’
4. On the dialog box ‘NCH Toolbar Installation Wizard’
   Select Internet Explorer and Mozilla Firefox
5. Click ‘Finish’ when installation is finished

Of the above two options, Option One which uses Debut Video Capture’ is the easier of the two options. i.e. one single software (Debut) performs both audio and screen capture. However, Option One does require two students to be physically present in the same location.

**Option Two**
To download free video capture (Debut software), follow Option One instructions 1 to 5.

Use a Skype recording program (on the CD or of your choosing) to capture the audio session.

*Note the Mac version on the CD has a 7 day trial on it…so only install it when you are ready to record

**OR** if you choose not to use Debut, you could go to [http://wiki.secondlife.com/wiki/Movie_recording](http://wiki.secondlife.com/wiki/Movie_recording) to check out a range of screen capture options.

**The newest version of QuickTime for the Mac allows capturing of audio and video from your desk top**
PROCEDURE
Read the material provided, and any that you feel would help your knowledge in this area. For instance, the mammographic screen sheet provided here is only an example. You are strongly encouraged to conduct your own search and include additional questions that you consider to be relevant. This will prepare you to act as both Practitioner AND patient. This exercise is hoped to deepen your knowledge in this way.

1. If you are using Option One: Have Debut video capture on standby.
   If you are using Option Two: have both Debut video capture and Skype on standby
2. Login to the Reaction Grid via Imprudence
3. Open the map or search and locate UniSA4
4. Teleport to this location by clicking teleport here.
5. In the middle of the area you will find the Polyclinic, at the moment represented by 3 rooms; Chiropractic, Mammography, and a Lactation Consultant room.
6. Click on the door to the Mammographic room and enter.
7. Click on one of the chairs and sit down. One student will assume the role of the patient and the other as the practitioner.
8. As the Practitioner, you will be attempting to elicit a satisfactory history from the patient, and yet be able to put the patient sufficiently at ease to enable you to conduct a successful mammographic examination.
9. The ‘patient’ should use their knowledge to interact with the practitioner providing a credible history. Think about how a patient would be feeling having an examination in this setting.
10. You may practice this procedure as much and often as you like, switching roles between the practitioner and the patient. When you think you have done it to your satisfaction, then activate your recording application on Debut and record the History taking session.

To save the file for submission
1. When you finish recording, click on ‘Recordings’ on the top row (5<sup>th</sup> icon from the top row).
2. A new dialogue box showing the list of your recordings will appear.
3. Select the file you wish to submit.
4. Click on ‘Save as’ and select the folder you want to save the file in.
5. Enter your real name, student number and date of recording as the title of your file. (Please note that your file will save as a wmv file and can be viewed with the standard Windows Media Player).
6. To double check that the file has been recorded properly, close the Debut Video Capture software.
7. Double click on the wmv file, you should be able to view the captured video. Please note it may take a few moments to load.
8. Due date for role play submission: End of Week 8, COB Friday 17 September 2010.
3D Simulated Learning in Mammography

Essential Readings


Abstract
To learn about anxiety experienced by women before they undergo breast biopsy, we surveyed by telephone 42 females aged 18 or over who were scheduled for this procedure. Unlike other studies, the present investigation explores retrospectively the impact of the discovery of a breast lump, hospitalization, and factors that aggravate and alleviate anxiety. An interview guide and an adaptation of the Spielberger, Gorsuch, and Lushene (1970) State Trait Anxiety Inventory Scale were used for data collection. The stress and coping models developed by Lazarus and Launier (1978) and Lazarus and Folkman (1984) contributed to the conceptual framework used in this study. Findings indicate that the anxiety levels of women after the discovery of a breast lump and prior to knowledge of biopsy results were extremely high. Age and time delay in contacting the physician had a statistically significant relationship on the participants’ stress levels. The findings provide information that contributes to understanding the problem of anxiety originating from the discovery of a breast lump.

- PMID: 1556029 [PubMed - indexed for MEDLINE]

**Abstract**

A systematic review of the research literature published in English between 1990 and 1999 was carried out to discover whether women with benign breast disorders suffer similar amounts of anxiety to women with breast cancer in the time between discovery of the problem and receiving a diagnosis, to include the immediate post diagnosis phase. The study was limited to primary research papers with explicit methodology applicable to hospital specialist breast clinics where the main focus of the papers was anxiety and/or psychological distress. Studies focusing exclusively on routine breast screening or exclusively on women with previously diagnosed breast cancer were omitted. A protocol for the review was agreed at the outset, addressing selection criteria, search procedures, methods of data extraction and analysis, and dissemination. Search terms were refined as the study progressed. A data extraction tool was constructed based on Benton and Cormack's framework (Benton & Cormack 1996, pp. 80-81). An initial search revealed 89 papers. Fourteen papers were found to meet the criteria for inclusion. The main findings were that women with benign breast disorders and those with breast cancer suffered from similar levels of anxiety and psychological distress in the period from first being aware of the problem up to the time of receiving a diagnosis. Anxiety levels were found to fall more quickly in women with benign disorders post diagnosis. Methodological flaws were detracted from the rigour of many of the studies. Implications for practice are discussed.

- PMID: 11155106 [PubMed - indexed for MEDLINE]


**Abstract**

PURPOSE/OBJECTIVES: To determine the amount of anxiety recalled by women who have had benign breast biopsies and to describe coping strategies used by these women during the time from discovery of the mass to definitive diagnosis. DESIGN: Descriptive, retrospective. SETTING: Surgical oncology practices, private and academic, treating patients living in five southern states. SAMPLE: 238 women who had excisional biopsies with benign results within the previous two years. Mean age of 52 years, 80% Caucasian, and 20% African American. METHODS: Subjects rated their anxiety from discovery to diagnosis on a 16-point visual analogue scale and answered a short-answer question about the coping strategies used to deal with the anxiety. MAIN RESEARCH VARIABLES: Anxiety and coping strategies. FINDINGS: The mean length of time from discovery to diagnosis was 35 days. No statistically significant relationship was found between the length of time from discovery to diagnosis and the amount of anxiety experienced. However, 58% of the women recalled severe amounts of anxiety during this time. Qualitative analysis grouped coping strategies into five patterns (themes): diversionary, spiritual, interpersonal, hopeful, and avoidance. CONCLUSIONS: The time between discovery of a breast mass and definitive diagnosis is a time of considerable anxiety for many women. Substantial time elapses between discovery and diagnosis, contributing to the possible morbidity associated with severe anxiety. IMPLICATIONS FOR NURSING PRACTICE: Nurses can work to decrease the time occupied by the diagnostic process, counsel women regarding the anxiety being experienced, and present coping strategies that may help.

- PMID: 7854934 [PubMed - indexed for MEDLINE]
Evaluation
Students were asked to complete an anonymous online questionnaire at the conclusion of the semester.

Of 16 students who elected to undertake the simulation assessment, 8 responded to the online survey. Six of the students were enrolled in the medical radiation program and two in the Graduate Diploma in Professional Lactation Consultancy. Most of the respondents were in the age group 19-24 (5), with two students being 25-34 and one over 55. All respondents were female.

All respondents indicated that they used computers and accessed the internet regularly, including frequent use of social networking. Although two students often played multi-user games, only two had ever used 3D virtual worlds. All students had high speed internet connections at home.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree/disagree</th>
<th>Neutral or N/A</th>
<th>Strongly agree/agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt as if I was communicating with a real person in the simulation</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>I was able to be expressive in the simulation</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>I was comfortable interacting with other participants</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>I was engaged in the learning experience</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>The learning experiences were active and collaborative</td>
<td>0</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>The simulation was an enriching experience</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Using the simulation was fun and exciting</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>I was willing to put in the effort needed to complete the learning activities</td>
<td>0</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>The simulation was a waste of time</td>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>The learning activity encouraged contact between myself and my classmates</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>I would take another course that involved 3D simulation</td>
<td>3</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>I would recommend that the instructor continue using simulation for this topic</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>I liked using the simulation as part of</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>
my course

<table>
<thead>
<tr>
<th>Participating in the simulation was a useful experience</th>
<th>1</th>
<th>0</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was difficult to access the simulation</td>
<td>5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Technical support was available when I needed it</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Open ended responses:

- It's real-time and more immersive than a discussion board or plain text chat

The interaction between other students and the different interface to complete work. It was so much fun, doing the work, especially the role playing bits. Not only is it creative, but a great way of learning. It was so much easier to retain what I learnt from doing the 3D simulation than a more traditional essay.

The program itself didn't really change much my learning skills in this module, but the module itself has increased my understanding of psychosocial aspects of patient-practitioner communication

I had never done a mammogram so it was hard to relate to the issues at hand.

Too much time given to understanding program

Not having to use a voice-over program or voice chat at all, prefer to just use text based chat

Conclusion

Students elected to undertake the simulation exercise described here as an alternative to other assessments. Of the 16 students who participated in the exercise, feedback was received from eight. Responses were positive from most students, although it appears that one student gave consistently negative feedback and did not see the experience as positive.

Very few technical difficulties were experienced by students, possibly due to the comprehensive nature of the materials provided. Most students reported the simulated mammography experience as a positive one, providing them with an opportunity to gain a deeper understanding of the possible responses and experiences of a patient in the simulated scenario.

Relevant References


**Publications Relating to this Case Study:**

In preparation
Ethics: Participant information sheet

Project title: Investigating the use of a 3D simulation environment to enhance student communication skills and interdisciplinary learning across three healthcare disciplines

Investigators:
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Dr Denise Wood and Dr Sheila Scutter (University of South Australia)

You are invited to participate in a study on the use of a 3D simulation environment as part of your study program at RMIT University.

Who is involved in this research study? Why is it being conducted?
Literature supports the use of 3D simulation environments as a form of experiential learning for students. The Discipline of Medical Radiations, Discipline of Nursing and Midwifery and Discipline of Chiropractic are coming together to pilot a module using a 3D simulation environment as a learning platform to assist students in developing communication skills with their patients in their respective discipline. As the clinical scenario is based on a single patient journey, this method of learning also has the potential of promoting interdisciplinary understanding and learning amongst healthcare students.

Why have you been approached?
You have been invited to participate in the study because you are enrolled in one of the three programs/courses that are using the 3D simulation environment as a learning and teaching tool.

What is the project about? What are the questions being addressed?
Findings of this study will inform lecturers of the effectiveness of 3D simulation environments as teaching and learning tools. It will provide health science disciplines of another form of experiential learning that will assist you in your transition from university learning to clinical workplace.

If I agree to participate, what will I be required to do?
This pilot module will form part of student learning and course assessment. Participation in this study involves you logging onto the Reaction Grid 3D simulated environment. You will be required to attend and participate in tutorial session(s), observe and reflect the interactions between healthcare practitioners and patients, conduct your own role play by assuming the role of practitioner/patient and reflect on your role play interactions. In addition, as part of the evaluation of this study, each student will be required to complete an online survey evaluating the effectiveness of the 3D simulation environment as a learning strategy (please note your survey responses will be anonymous). As part of the
data collection of this study, you will also be invited to participate in a focus group discussion seeking input on your learning experiences of the 3D simulation environment.

**What are the risks or disadvantages associated with participation?**
There are no anticipated risks involved in this study. As part of this study, you will be required to complete an online survey hosted on a secured website. Again, there are no anticipated risks associated with the completion of an online survey. However, should you have any concerns, please either the Chief Investigator or your RMIT lecturer in your program.

**What are the benefits associated with participation?**
Participating in this study will enable you to experience a form of learning that simulates the kind of real life situations as in clinical workplace. This module will form part of your course assessment so the time you undertake in this module will contribute towards your course grading.

**What will happen to the information I provide?**
Findings from the study will only be accessible to the researcher team listed above. All data will be de-identified before being analysed. All data will be securely stored in password protected network for 5 years before being deleted. No individuals will be identified in any publications arising from this study.

Please note that information associated with your learning and assessment tasks in this module will form part of this data. In addition, relevant open-ended comments in the CES pertaining to the 3D simulated learning environment will also be incorporated as part of the data of this study.

As a participant in this module, you are free to withhold permission for any of the above information to be used as part of the research data. There will be no repercussions on your grades or the progress of your course should you decide to exclude your information pertaining to your learning and assessment activities as part of the research data.

**What are my rights as a participant?**
For RADI1143 and MEDS2127, participation in this study is optional. i.e. students can choose to undertake this module or another mode of assessment. Should you decide to participate, for:

**RADI1143**: this module will form 25% of your assessment.

**MEDS2127**: this module will form 40% of your assessment.

*Please note that as this module forms part of your course assessment, it is therefore not possible for you to opt out of the module once you have opted in.*

For OHTH2145 students: this forms one part of your assessment load for this course and is worth 25% of your overall mark for the Course.

Upon completion of this research project, you will receive an A4 page of report summary.

**Security of the data**
All data will be securely stored in the researchers’ computers and university servers which are password protected.
Find out more about learning in a 3D simulation environment

Before consenting to participating in this study, we strongly encourage you to visit a typical 3D simulation environment. You may have already heard of Second Life. Visit ‘Second Life Education’ http://education.secondlife.com/?lang=en-US You can also visit one of the demonstration sites ‘What is Second Life’ at http://secondlife.com/whatis/

Whom should I contact if I have any questions?

If you have any questions, please do not hesitate to contact Dr Jenny Sim jenny.sim@rmit.edu.au or 9925 7786.

Thank you for your interest in this study. Your contribution and participation in this study is greatly appreciated.

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Jenny Sim  Jennifer James  Marcus McDonald

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Denise Wood  Sheila Scutter

This project has received ethics clearance from the RMIT CHEAN Committee. Approval no: ***
Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, see http://www.rmit.edu.au/rd/hrec_complaints