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Exploring nursing students' decision-making skills whilst in a Second Life clinical simulation laboratory

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SUMMARY

Aim: To explore nursing students' decision-making skills through the use of a 3D virtual environment such as Second Life.

Method: An exploratory qualitative evaluation of the students' experience of learning decision-making skills whilst in a Second Life clinical simulation laboratory. A convenience sample of five third year student nurses entered a simulated world environment where they cared for six patients over 1 h. The written communication text from the Second Life scenario was saved into a Microsoft Word document. Additionally a semi-structured tape-recorded one to one interview was conducted immediately after the Second Life simulation in order to explore the students' decision-making skills.

Results: The communication text illustrated that the majority of decisions ($n=21$) were made in response to a situation or a patient request, therefore 'reactive' rather than proactive ($n=9$). Only one student carried out a vital signs assessment on a newly admitted patient (Willie). The interviews produced two themes, performing decision-making and improving learning. The absence of 'visual cues' such as pre-operative checklists, vital sign observation charts and 'Nil by Mouth' signs may offer a rationale for why students were more reactive.

Conclusion: Further work is required for students to practice decision-making skills. With further development the innovative 3D virtual worlds such as Second Life could provide this experience.

Introduction

The importance of teaching practical skills to ensure safe effective practice by the student nurse has become increasingly apparent. One of the key principles of the Nursing and Midwifery Council (NMC), the governing body for the United Kingdom, is that registered nurses "have a duty of care to patients and clients, who are entitled to receive safe and competent care" (NMC, 2008, p4). Historically, in order to learn the skills of nursing, student nurses practiced directly on the patients and clients. This was often referred to as the apprenticeship model of learning (du Boulay and Medway, 1999). Problems arose from this model as students had limited supervision due to the registered nurse's workload and they often failed to learn the theory underpinning their actions (Nicol and Glen, 1998). For more than a decade the fitness for practice report by the United Kingdom Central Council UKCC (1999) identified that following qualification and registration there were a number of skill deficits in newly qualified nurses. One of which is decision-making (Luker et al, 1996). Worringly, Scholes et al (2004) in a review of nurse education in England found limited improvement. Since then the NMC (2004) has developed standards of proficiency for pre-registration nursing education and the essential skill clusters (NMC, 2007) which include decision-making.

Literature

The goal of decision-making and the reason it is taught is to benefit the patient (Harbison, 2001). However the skills involved and the process of decision-making are complicated (Garrett, 2005). It is widely recognised that there are two main theories to making decisions. One is the intuitive humanistic approach (Benner and Tanner, 1987) also known as the information processing theory (Lauri and Salantera, 1998) where experienced decision-making happens over time (King and Clark, 2002). The second is a systematic-positivist approach (Garrett, 2005), also known as analytical decision-making theory (Lauri and Salantera, 1998) based on systematic processes through analysis and deductive, inductive and abductive reasoning (Garrett, 2005).

Consolidation of practical decision-making skills takes place in the classroom (Garrett, 2005). However it is argued this rarely happens (Croskerry, 2005) since decision-making is not a skill that is easily explained in a classroom (Ajjawi and Higgs, 2005). Instead, critical

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thinking skills are generally developed in the workplace with the guidance of a mentor (Garrett, 2005).

However, due to constraints related to clinical placements and limited availability within clinical simulation laboratories, the focus is on nurse educators to provide innovative, interactive teaching, learning and assessment strategies to develop students' clinical decision-making (Standing, 2007).

The use of simulation to help with the development and teaching of clinical skills is now well accepted throughout the world. However the research conducted in simulation is within a real life simulated clinical environment, and not the virtual one. There is therefore a need to carry out further research on the efficacy of the virtual world setting.

Caledonian University has invested in the virtual environment market, and own an Island on Second Life. The university campus is situated with a realistic copy of the actual clinical simulation laboratory (CSL) where currently pre and post registration nursing students learn and become competent in skills.

Second Life is a 3D virtual environment where Residents of the virtual world can socialise, participate in individual and group activities and create and trade virtual property in real time (Parker, 2008). Although there are medical (Danforth et al., 2009; Diener et al., 2009) and nursing (Skibra, 2007) publications explaining that Second Life can provide a unique and flexible environment to enable simulation education without the constraints of distance and space and provide ward environments with real case patients there is limited research of its use as a learning and teaching strategy.

Aims

To explore nursing students' decision-making skills through the use of a 3D virtual environment such as Second Life.

Method

This study was a qualitative exploration of the students' experience of learning decision-making skills using the 3D virtual environment of Second Life. Following the activity the students were encouraged to reflect on their experience through a one to one, semi-structured, tape-recorded interview.

The study

Students assumed Avatars (a student nurse image in Second Life) and accessed the Clinical Simulation Laboratory within Second Life after changing into nursing uniform. Each student individually participated in a scenario-based activity. This involved communication and visual assessment of six patients (Table 1) prioritising their care and explaining their decisions.

One of the research team acted as the students' mentor via their individual Avatar and provided feedback and guidance to the student Avatar.

Study site, population and sample

This was a case study undertaken in one Higher Education Institution (HEI) in Scotland where the researchers are lecturers. The population studied was convenient and consisted of all student nurses on a three year Diploma of Higher Education/Bachelor of Nursing or Bachelor of Arts in Nursing Studies (BANS) Adult Nursing course. The population was e-mailed through the Blackboard site (Virtual Learning Environment) with information about the study, and those interested were asked to reply. Twelve students replied and were sent detailed information about the study. Six students volunteered to take part in the Second Life training. Thereafter one student dropped out, leaving five students to participate in the study.

Table 1
Patient scenarios.

May:
88 years old has been a patient on the ward for 3 weeks. She has been treated for a Urinary Tract Infection and is awaiting a bed in the care of the elderly unit for assessment. She has Alzheimer type dementia and is confused, disorientated and anxious.
Laura
39 years old. She has a history of gastric reflex and is awaiting an upper gastric endoscopy.
William
56 years old. He was admitted 10–15 minutes earlier with acute right sided upper abdominal pain. He was given Morphine 10mgs IM approximately 30 minutes go. Cholecystitis is suspected and the decision based on the abdominal ultrasound is awaited.
Colin
22 year old professional rugby player who has just arrived back from theatre following a left knee arthroscopy. He is to remain non weight bearing until review by the medical and physiotherapy team tomorrow. Discharge planned following review.
Priscilla
62 year old lady who is awaiting discharge following an appendicetomy. Discharge is planned at 11 am. An out patient appointment needs to be arranged for 6–8 weeks and she will require an appointment with the district nurse and a prescription for analgesia.
Anne
44 year old lady who is 5 days post open cholecystectomy. Although up and about and eating well the wound is very red and moist in appearance. She is waiting for her MRSA screen results.

Ethics

Ethical approval was granted from the School Ethics Committee, informed consent was obtained from the students and the researchers handled all data according to the Data Protection Act of 1998.

Data collection

The written communication text from the Second Life scenario was saved into a word document and a semi-structured, tape-recorded, one to one interview was conducted with the student immediately after their experience on Second Life by one of the researchers. Semi-structured interview guidelines allowing flexibility were prepared, using open questions. This facilitated probing, reflecting, and exploring new leads.

Data analysis

The communication text was firstly analysed by examining the decisions and determining whether they were initiated by the student, that is proactive, or in response to an evolving scenario, that is reactive. In addition, consideration was given to the activity of delegation to the mentor who was also 'on duty' within the scenario. Further analysis of the communication text involved exploring the student's responses to the patient's comments or requests. Expected nursing care interventions for each patient were compiled. The decision or response made by the student to each of these interventions was then recorded.

An analytical seven-stage process, as recommended by Deikelmann (1989), was utilised by one researcher to analyse the data from the interviews (Table 2). Barnett (2005) suggests that this particular framework can provide a good level of rigour, particularly trustworthiness. The interviews were transcribed and treated as text analogues for interpretive analysis using a computer-assisted analysis of qualitative data.

Findings

The communication text illustrated the decision-making activity that took place for each patient (Table 3). The majority of decisions