

Introduction

“Tell me, and I will forget. Show me, and I may remember. Involve me, and will understand” (Confucius circa 450 BC). Simulation is being used in nursing education as a pedagogical teaching strategy, not only in academia but in the clinical setting as well. There are different types simulation of modalities available. They include the use of high-fidelity and low-fidelity mannequins, standardize patients, computer-assisted instruction, virtual reality, and task trainers (Nagle, McHale, Alexander, & French, 2009; Nehring & Lashley, 2009). Simulated patient scenarios provide students with experiences they may not be exposed to in real life context, thus allowing students to practice in safe and nonthreatening environment. Using web-based formats of simulation should be considered as another option to address this on-going need. Students can learn from their errors without putting the patient at risk. According to Kelton (2008) students perceive the process of learning in virtual worlds as enjoyable and that having fun while learning creates a greater desire to learn.

3D Simulation In Nursing Education

Providing clinical opportunities to generic nursing students is a challenge today, due to the limited number of clinical placements. In addition healthcare systems are constantly changing due to shorter length of stays, fiscal challenges, and increases in regulations (Jenson & McNally Forsyth, 2012). Many colleges have incorporated the use of simulation to provide nursing students missed clinical opportunities in specialty areas. Virtual simulations keeps students engaged and allow students to have some ownership into their learning which makes learning more enriching.

3D Simulation In Clinical Practice

Simulation in nursing is not new and has been around a long time (Nagle, McHale, Alexander, French, 2009). Simulation is also being used in the hospital setting for orientation, competency assessment, and interprofessional team building. The use of virtual simulation permits nursing staff to work at their own pace, can be done at home and not necessarily on the unit or at work. Using web-based clinical simulations provides 24-hour access allows for self-directed and targeted information to be used for the development of clinical competence (Kowlowitz, Davenport, & Palmer, 2009).

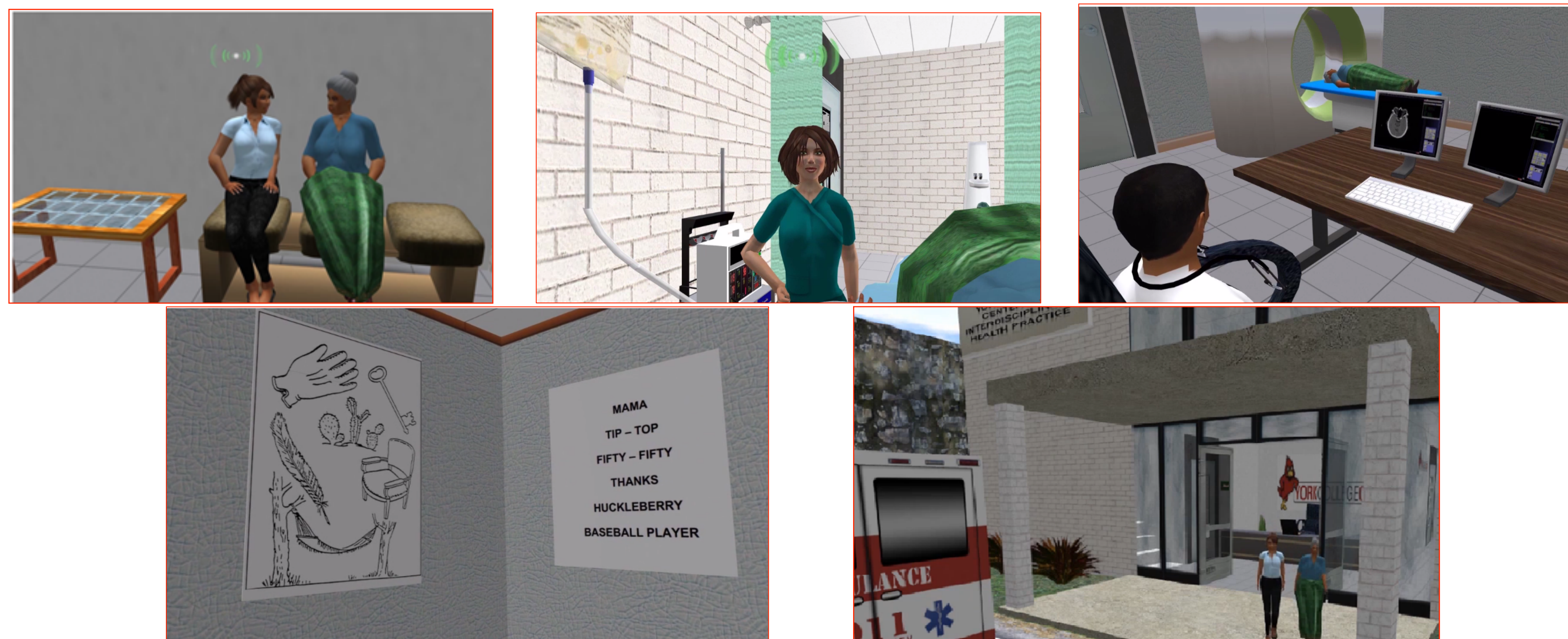
Scenario Development

A group of faculty across several disciplines and programs worked together to develop a 3D stroke scenario. The stroke scenario was based on the standards of care from the National Institute of Health Stroke Scale (NIHSS), Joint Commission, and Get With The Guidelines (GWTG). The script was created to guide students through the assessment and acute management of patient experiencing a stroke. The story was about an older woman (Rita Bowman) who does not consistently take her medication and does not adhere to low sodium diet and develops a stroke. Rita is followed through her emergency department admission to discharge from a rehabilitation center.

Once the script was finalized the next step was to create the virtual world where the story would take place. The 3D platform selected was Second Life by Linden Lab. Second Life is a virtual world where avatars are used to interact with each and you have the ability to change and control the environment (<http://secondlife.com/whatis/>). It is a 3D simulation platform that requires minimum gaming experience. Second Life also allows users to create buildings, trees, and vehicles. Machinma was selected to support the virtual environment. It is online video platform that has graphics that can be used to create movies.

Nursing students viewed the online scenario during the medical-surgical nursing lab. Students viewed the online scenario at individual computers with headphones. To assess learning the students were given pre/post tests.

Screen Shots



A. Rita Bowman and daughter B. A nurse administering tPA to Rita C. Provider reviewer Rita’s CT scan D. NIHSS Snap Shot E. Rita Bowman and her daughter leaving Rehab.

Summary

Virtual simulation offers an innovative learning opportunity for students. The virtual scenarios provide a safe environment for students to practice in. The students have to make decisions in a clinical environment without harming a real patient. The skills and knowledge they learn in the virtual reality will provide the students with confidence and knowledge to take care of real patients in the clinical setting. The three learning styles that are addressed include: visual, auditory, and kinesthetic thus giving each student a chance to learn with their own style. There are other virtual simulation options available for nurse educators to consider if they are unable to develop their own. Several publishers have for example Wolters Kluwer Health partnered with Laerdal and the National League of Nursing and developed v-Sim® for Nursing. See table below for other options.

Publisher	Title
Elsevier	Virtual Clinical Excursions
Pearson Higher Education	The Neighborhood 2.0
Wolters Kluwer Health	V-Sim® for Nursing

References

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