Virtual Interprofessional Simulation: Design, Delivery, and Impact

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Background/Rationale

Simulation-based training (SBT) is a powerful and well-established practice of experiential learning that facilitates the acquisition of interprofessional knowledge, skills, and attitudes and fosters the development of critical thinking skills at the individual- and team-based levels (Paige Barbee, Brown, & Rojas, 2015). These skills are foundational to interprofessional education (IPE) and practice (Jeffries, Swoboda, & Akintade, 2015), and represent a leading focus for nurse faculty as they incorporate new teaching and learning strategies to prepare the future nursing workforce to deliver safe, quality, and patient-centered care (Institute of Medicine, 2011). Creative alternatives are needed to traditional face-to-face teaching and learning when time, distance, course schedules, and other constraints serve as barriers to engaging nursing and health professions students in true experiential IPE learning. The use of virtual reality software as a platform for simulation is one example of an effective vehicle to deliver clinical case studies that foster experiential learning (Verkuyl et al., 2017) and clinical decision-making (Foronda, Hudson, & Budhathoki, 2017).

Teaching with the use of virtual reality simulation provides new opportunities to promote development of real-world knowledge, skills, and attitudes with a broad audience of learners (Leggette, et al., 2012) in a non-threatening learning environment without risk to patients (Paige et al, 2015). A review of studies evaluating education through the Second Life™ platform for simulations suggests effective transferability of theoretical knowledge from the classroom into practice (Irwin & Coutts, 2015). Virtual simulation assists learners to translate course content into real-world scenarios while promoting role socialization (Anderson, 2013). This orientation to the roles and responsibilities of interprofessional care providers is one of four core competencies for effective interprofessional practice (Interprofessional Education Collaborative, 2016). Further, the use of a Second Life™ virtual simulation may positively impact learner attitudes about team-based practice, which is an important focus for the improvement of care delivery in the real world (Caylor, Aebersold, Lapham, & Carlson, 2015).

Utilizing a virtual simulation platform, such as Second Life®, provides nurse educators with an innovative, evidence-based teaching and learning tool for bringing together students from diverse health professions to collaboratively practice the delivery of safe, quality, patient-centered, and team-based care.

Method/Methodology

A palliative care conference scenario was developed for online simulation delivery using the Second Life® virtual world platform integrated with an online learning management system and scheduling application. With faculty performing in the patient role, students led a care conference intended to assist the patient in making end-of-life care decisions based on a new diagnosis, prognosis, and treatment plan.

The virtual simulation included: preparatory learning material and technology tutorials, a scheduled simulation event for groups of 6-8 students representing at least three of the four health professions
programs, and a guided asynchronous debrief discussion forum. The debrief discussion featured self-assessment of demonstrated interprofessional skills and evaluation of interprofessional competencies essential to collaboration.

A mixed method exploratory evaluation design was used to examine student outcomes associated with the piloted virtual simulation learning module. A non-random purposive sampling approach was used (n = 31). Quantitative data were collected using the Norris et al. (2015) five subscale (Teamwork, Roles, and Responsibilities; Patient Centeredness; Interprofessional Biases; Diversity & Ethics; Community-Centeredness) Interprofessional Attitudes Scale (IPAS) to assess attitudes related to interprofessional core competencies pre- and post- implementation. Qualitative data were collected using a post-simulation survey.

**Results/Outcomes**

A Wilcoxon signed rank test was performed to analyze pre- and post- implementation survey data. Results indicated that post-test ranks were significantly (significance level .05) higher than pre-test ranks for two Teamwork, Roles, and Responsibilities subscale items: thinking positively about other health care professionals (z = -2.333, p < .020) and necessity for health care trainees to learn together (z = -2.321, p < .020).

Thematic analysis was performed on the qualitative data. Findings support simulation-based training (SBT) as an effective vehicle to provide students with an opportunity to practice interprofessional teamwork. Collaboration and communication were cited as the most valuable outcomes of the learning experience.

**Conclusions**

Second Life® provided a creative and effective alternative to traditional face-to-face teaching and learning. Students emphasized the impact of the learning experience on both their willingness to work as a team and commitment to encouraging collaboration between professions. Students anticipated these new values as most likely to positively influence their future practice. While some Second Life® functionality improvements are needed, the availability and cost of the software provides a tool for virtual interprofessional simulations that can be feasibly implemented. Translating evidence from virtual interprofessional simulations advances evidence-based teaching practice in palliative care.

**Title:**
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**Keywords:**
Interprofessional Education, Palliative Care and Virtual Simulation

**References:**


Abstract Summary:
This presentation shares the design, delivery, and impact of an evidence-based interprofessional learning experience featuring a palliative care simulation using the Second Life® virtual world platform. The virtual simulation engaged nursing, nutrition, audiology, social work, and clinical research management students in experiential learning to build interprofessional competencies in palliative care.

Content Outline:

- Introduction
  - Rationale
  - Background
- Methods
  - Pedagogy
  - Technology
  - Study design
  - Data collection
- Results/Outcomes
  - Quantitative analysis
  - Qualitative Analysis
- Conclusions

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Professional Experience: I have been a nurse educator and leader in both the clinical and academic settings for 5 years, including teaching in the online environment for the past 4 years. During that time, I attained NLN CNE certification, and have been active in efforts to grow faculty expertise in interprofessional education at ASU. This has included the development and delivery of face-to-face simulations with multiple disciplines across ASU. I have delivered a variety of poster presentations on the topic of interprofessional education, including at the STTI 43rd Biennial Convention in 2015, and the AACN Baccalaureate Education Conference in 2016.

Author Summary: Heidi Sanborn is Clinical Assistant Professor and Interim Director of the online RN-BSN Program in the College of Nursing and Health Innovation at Arizona State University. Her career in nursing has transitioned from the bedside to education at the clinical, associate, and baccalaureate levels. She is working to complete a DNP in Innovation Leadership. Heidi has earned distinction as an NLN Certified Nurse Educator and is a 2017 scholar in the NLN LEAD fellowship program.

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Professional Experience: I have 17 years of direct practice and administrative experience as a gerontological social worker serving older adults and their families through the provision of health, behavioral health, and social services in home and community-based, home health, in-patient, and skilled nursing facility settings, including palliative and end-of-life care planning, and over 25 years of experience in university-level health-professions education. I participate in a variety of interprofessional education and practice initiatives between health professions schools as a member of the Arizona Nexus. I led the effort to offer online education in the ASU School of Social Work developing and delivering several undergraduate and graduate online courses, including interprofessional courses, as well as developing and delivering two online interprofessional graduate-level certificates.

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