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Review Article

Simulation Use Within the Classroom: Recommendations From the Literature

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Abstract: Simulation as a teaching and learning strategy has been primarily used with small groups of learners in a laboratory setting. This article reviewed the use of simulation in a large didactic classroom setting. A summary of the findings include the student role, facilitator roles, participant locations, prebriefing, evaluation of learning and debriefing. Challenges that the educator can anticipate with respect to facilitating large class simulations are discussed, as well as recommendations, are offered.

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Introduction

The nursing theory-practice gap continues to be problematic for nursing student and new nurses. Educators attempt to narrow the gap by integrating clinical experiences into the classroom setting (Benner, Sutphen, Leonard, & Day, 2010). With technological advances, simulation continues to evolve toward a more realistic representation of clinical practice. In turn, nurse educators are incorporating simulation experiences as learning strategies into their teaching activities. High-fidelity human simulators (HFS) offer opportunities for students to perform physiological assessments as well as practice verbal interactions with patients, family members, and other health care professionals. Just as the *Future of Nursing Report* (Institute of Medicine, 2010) called on nurses to practice to the full extent of their education and training, nurse educators need to practice to their full extent by using these technological resources.

Nursing programs continue to experience increases in student enrollment, faculty shortage, and limited budgets. Educators and administrators are searching for teaching strategies that are both efficient and effective. Simulation has been shown to be an effective teaching modality (Hayden, Smiley, & Gross, 2014), albeit costly, both in terms of materials and human resources. A deliberate plan is needed for integrating simulation use in nursing education, specifically, one that maximizes the use of limited resources. Often, HFS is used in conjunction with clinical

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or skills courses. Seropian, Brown, Gavilanes & Driggers (2004) remind educators that simulation is not just a mannequin that is relegated to selected educational nursing environments. One setting, reported to a lesser extent, is the use of simulation within the traditional large lecture classroom. The literature was reviewed to identify the use of simulation by large numbers of students in the lecture classroom. Several themes emerged and are presented here. Recommendations for effectively integrating simulation in the traditionally didactic learning space are also described.

Key Points

- Students and faculty have specific responsibilities in large classroom simulations.
- Fidelity and equipment needs for large classroom simulation should be addressed early in planning.
- INACSL Standards of Best Practices: Simulation, can be applied to large classroom simulation-based experiences.

Background and Significance

Simulation-based experiences (SBE) include a variety of structured activities that present nursing students with realistic opportunities to learn skills, knowledge, and attitudes in the preparation for their roles as nurses (Meakim et al., 2013). In the SBE, fidelity plays a significant role in the design. Fidelity refers to the realism or believability factor that is present in a learning environment (Meakim et al., 2013). Matching the learning objectives with the needed degree of fidelity helps direct nurse educators in appropriately selecting the type of simulator required to optimize the simulation-based learning activities. Learning objectives are generally tailored to help learners in ''connecting the dots'' and achieve cognitive, psychomotor, and affective outcomes (Kardong-Edgren et al., 2015; Merriman, Stayt, & Ricketts, 2014). Traditionally, SBE have favored structuring simulations for smaller numbers of learners (four to six per group) in a laboratory setting, using a full body mannequin (Thompson & Bonnel, 2008; Wodrich, Gilmartin, & Fink, 2013). Rochester et al. (2012) conducted SBEs with 375 students and indicated that all the students served as active participants by assigning them to ten-member groups. Within each group, composed of five observer participants and five active participants, members exchanged roles during later portions of the unfolding simulation. The simulation and debriefing experiences were conducted within each ten-member group.

Increasingly, new nurses are expected to enter the clinical sites and rapidly become independently functioning caregivers (Jeffries, 2005). This can be challenging for new nurses, as providing safe patient care requires that nurses go beyond mere rote knowledge and psychomotor skills to effectively respond to the dynamic patient care situations (Harris, Eccles, Ward, & Whyte, 2013). Many current nursing students and new nurses are from the millennial generation and may have differing perceptions and attitudes than the nurse educators. Nurse educators can assume that the millennial students in their classrooms may come with higher levels of technological skills, differing expectations regarding their role in learning, and different outside-of-class time competing demands (Johanson, 2012). To assist the learner in understanding the complexities of providing safe, competent care, educators are exploring alternative teaching and learning strategies than those that are currently part of the traditional classroom setting. These strategies generally attempt to shift the focus from being the instructor who as the primary conveyer of information to being the one who facilitates discovery by students. By shifting toward more active learner-centered facilitator roles, educators will better orchestrate learner opportunities in making connections between theory and practice.

Theoretical Framework

To facilitate a better understanding of learning with simulation in a didactic classroom, two theoretical frameworks guided the literature review. Kolb's Theory of Experiential Learning and the Jeffries Simulation Framework were used to guide a standardized approach in selecting articles to be included in this literature review. Kolb's Theory of Experiential Learning describes learning as being enhanced when students are actively involved in gaining knowledge through experience with problem solving, decision-making, and active reflection (Dewey, 1938; Kolb, 1984). Through actual hands-on experience, students can begin to cultivate a better, more thorough understanding of the tasks that they must safely, purposefully, and accurately perform as professional nurses.

The NLN/Jeffries Simulation Framework (Jeffries, 2012) was also chosen for this review due to its fit with the current International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation (SM). The NLN/Jeffries Framework identifies five constructs (the teacher, educational practices, the student, simulation design, and outcomes) as influencers for the learning that can result from a simulated learning experience. The INACSL Standards of Best Practice: Simulation, created to facilitate the developing the science of simulation, provides structure for addressing: terminology, professional integrity of participants, participant objectives, facilitation, facilitator, debriefing process, participant assessment and evaluation, simulation-enhanced interprofessional education, and simulation design (http://www.inacsl.org/i4a/pages/index.cfm?pageID=3407). Using these two frameworks, articles were examined for inclusion that described simulation use in didactic settings and followed simulation design criteria.