A B S T R A C T

The objective of the study was to examine differences in learning outcomes, in students in the role of observer, using an observation guide and those without an observation guide during a simulation-based learning experience. The study design was quasi-experimental and included statistical analysis of variance (ANOVA) and independent t-tests to identify differences in learning outcomes. No significant improvement in knowledge, self-confidence, or collaboration was noted between baccalaureate nursing students (n = 121) using an Observation Guide (n = 62). However, students utilizing an Observation Guide were more satisfied with the Simulation-based Learning (SBL) experience (t (117) = 2.518, p = 0.013), although effect size was small (r = 0.05). Challenges such as decreases in clinical placement sites and increased student enrollment, indicate a need for improvements in implementation of SBL for student observers.

1. Differences in Learning Outcomes in Simulation: The use of guided observation in the observer role

The Carnegie Report (Benner et al., 2010) called for a profound transformation in nursing education focusing on integration of didactic and clinical knowledge for a sense of salience in clinical practice. Simulation-based learning (SBL) has been increasingly used to support this transformation in nursing education. However, there is a lack of evidence regarding how to enhance knowledge, collaboration, satisfaction and self-confidence of students in the observer role during simulation experiences. The purpose of this study was to determine if there were differences in learning outcomes, including knowledge, self-confidence, satisfaction, and collaboration between baccalaureate nursing students using an Observation Guide compared to those without an Observation Guide when in the role of observer during a SBL experience. If learning outcomes could be improved by using an observer guide, simulation-based learning experiences would be more meaningful for student and efficient for faculty.

1.1. Background literature

In general, SBL in the United States is conducted using a single faculty member with groups of four to eight students who are each assigned as embedded participants (Jeffries, 2007; Meakim et al., 2013). Embedded participants are assigned specific roles in the SBL experience. Some student roles include the active role of primary nurse or secondary nurse; while others may be assigned more passive roles as family members, ancillary personnel, or observers. Active participants have control over the simulation experience and can physically interact and intervene during the simulation. Passive participants are unable to control the simulation experience and cannot physically interact or intervene during the simulation (Jeffries and Rogers, 2012). Students participating in passive roles such as observer are not considered active participants in the clinical learning experience (Bethards, 2014). Little is known about the difference in knowledge acquisition among students in the various roles, specifically the observer role.

In a study on end-of life simulation (Fluharty et al., 2011), knowledge, self-confidence, communication skills, and satisfaction with simulation were evaluated in a sample of 370 associate degree, baccalaureate, and accelerated baccalaureate nursing students. There were no differences in knowledge gain between students in the primary nurse role as compared to the observer role. Jeffries and Rizzolo (2006) explored differences in knowledge, self-confidence, judgment, and learner satisfaction based on simulation role assignment in a sample of 403 baccalaureate and associate degree students enrolled in their first medical-surgical nursing course. No significant differences were found in knowledge gain among students who were assigned to static mannequin or high-fidelity patient simulators. Regardless of the type of simulation, students in the observer role rated themselves lower in clinical judgment and collaboration than did those in the nurse role. The researchers suggested that faculty should provide a means to engage students in the observer role to increase collaboration. Observation guides given to students prior to the experience may fulfill this need (Nehring and Lashley, 2010). Thidemann and Soderhamn (2013) discussed vicarious learning, in which the observer role is not passive but a role of engagement. Their strategy involved assigning one specific
task to students participating in the observer role during the simulation. Scharr et al. (2013) used an observer record that focused on the Quality and Safety Education for Nurses (QSEN) competencies. This observation form focused on quality improvement, safety, evidence-based practice, informatics, teamwork and collaboration.

In a systematic review by O'Regan et al. (2016), the authors indicate that directed observation is associated with learner satisfaction and helps the learner to transition from an inactive viewer to focused observation. Students that use an observation tool may have a clearer understanding of the objective for the learning experience. In addition, Kelly et al. (2016) discuss how observer tools can evolve with the learner throughout the curriculum. Observer tools may start as novice checklist and progress to open-ended questions that engage the students in higher levels of critical thinking. Although recent implementation of observation tools has been sparingly used by nurse educators, there is a lack of robust research evidence on the effect of this approach on learning outcomes.

Debriefing, a time of reflection following the active learning experience, is a critical component of SBL. Debriefing enables the student to reflect on learning and allows students to express thoughts and feelings without fear of repercussion. Faculty facilitate debriefing by using a structured format that may enhance clinical reasoning and knowledge acquisition. This process enables the student to focus on learning objectives and foster reflective learning while enhancing clinical reasoning that helps transfer knowledge into clinical practice (Nehring and Lashley, 2010).

The purpose of the current study was to determine if there were differences in learning outcomes, including knowledge, self-confidence, satisfaction, and collaboration between baccalaureate nursing students using an Observation Guide and those without an Observation Guide when in the role of observer during a SBL experience.

2. Theoretical framework

Kolb's Theory of Experiential Learning (1984) was used as the theoretical basis for the study. Kolb states that “learning is the process whereby knowledge is created through the transformation of experience” (1984, p. 38). Kolb (Fig. 1) proposed that experiential learning requires concrete experience, reflective observation, abstract conceptualization/analysis and active experimentation. Experiential learning directly relates to the role of observer in which students participate during SBL. In this study, the concrete experience encompassed the simulated experience in which students observe a pre-recorded video simulation. In this setting, the student participates in the concrete learning experience through observation. Reflective observation is supported when the observer and guided observer students learn through watching the students in the role of nurse throughout the simulation. Students were supported within the area of abstract conceptualization by using critical reasoning and reflection to evaluate the performance of the students in the role of the nurse. Guided observers utilized a written Observation Guide (Fig. 2) to assist in reflection and integration of their observations into a cognitive framework and the observers reflected and integrated without the assistance of an Observation Guide. The students referred to these observations during simulation debriefing to enhance abstract conceptualization. Active experimentation encompassed the debriefing phase of the SBL experience where guided observers and observers used the learning gained from observing the video recorded to solve problems related to the SBL experience. This phase can be extended as the students apply learning to clinical practice.

Kolb's theory postulates that the essence of learning is in the way the learning experience is processed. Learning begins with the experience and is processed through reflection, then is applied through action. The Observation Guide was designed to enhance reflective observation and abstract conceptualization.

3. Method

A quasi-experimental design was used to determine differences between a pre-test post-test control group design after viewing a video recorded SBL experience. Institutional Review Board approval was granted by The University of Texas at Tyler, The University of Central Arkansas, The University of Louisiana at Monroe, and Grambling State University. Eligible students were invited to participate in the research study. The primary investigator explained the purpose of the research study and the role of the student if they chose to participate. A description of the possible risks and benefits connected with being in the study was also provided. Participants were also informed that participation in the research study was voluntary and that they could withdraw from the study at any time. All participants in the research study provided written consent to participate.

A convenience sample of 121 baccalaureate nursing students from four universities participated in the research study. Students enrolled in fundamentals of nursing courses at each university were eligible to participate. In this study, the concrete experience encompassed the pre-recorded video simulation in which students observe a pre-recorded video simulation. In this setting, the student participates in the concrete learning experience through observation. Reflective observation is supported when the observer and guided observer students learn through watching the students in the role of nurse throughout the simulation. Students were supported within the area of abstract conceptualization by using critical reasoning and reflection to evaluate the performance of the students in the role of the nurse. Guided observers utilized a written Observation Guide (Fig. 2) to assist in reflection and integration of their observations into a cognitive framework and the observers reflected and integrated without the assistance of an Observation Guide. The students referred to these observations during simulation debriefing to enhance abstract conceptualization. Active experimentation encompassed the debriefing phase of the SBL experience where guided observers and observers used the learning gained from observing the video recorded to solve problems related to the SBL experience. This phase can be extended as the students apply learning to clinical practice.

Fig. 1. Kolb’s theory of experiential learning.
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