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Innovations in Simulation

The Wheel in the Lab: Innovative Learning Strategy With Simulation

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KEY WORDS

simulation;
advanced nursing skills;
gaming;
self-selection;
competence;
performance anxiety

Abstract: Nursing students often experience anxiety when independently demonstrating competence with new skills. To decrease student anxiety, one baccalaureate college of nursing's faculty implemented an innovative learning strategy in the advanced skills curriculum. Using a form of educational gaming called the "Wheel of Skills," students self-selected their advanced skill for demonstration during "Skills Observation Simulation." This innovative gaming strategy using self-selection of skill can reduce student anxiety during simulation, engage generational students, and appeal to various learning styles. This article will describe the development and implementation of the "Wheel of Skills" for use as a learning strategy in nursing simulation.

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Simulation is frequently used internationally in health care education as an active learning strategy (Al-Gharries, Cooper, & McKenna, 2017; Cantrell, Meyer, & Mosack, 2017; Kelly, Berragan, Husebo & Orr, 2016; Shearer, 2016). In undergraduate nursing curricula, the use of simulation as an educational strategy provides opportunity for learners' integration of theory and effective transfer of skills in an imitated authentic clinical setting to develop critical reasoning and promote situated cognition as part of nursing professionalism (Jeppesen, Christiansen, & Frederiksen, 2017). Multiple essentials of learner understanding from foundational to complex can be practiced and evaluated with simulation (Kelly, Berragan, Husebo,

& Orr, 2016; Shearer, 2016). Individual simulation scenarios are often used to evaluate nursing student skill competencies beginning with basic elements, such as obtaining/assessing vital signs or administering medications to more advanced skills, such as intravascular access and management. Formative and summative evaluation of individual student skill competencies with high-fidelity simulation includes not only proficiency with a particular skill or skill set, but also critical clinical reasoning skills and communication considered vital for safe, effective nursing practice (Jeppesen et al., 2017; Shearer, 2016).

However, the simulation lab can be a high stress environment (Al-Gharries et al., 2017; Cantrell et al., 2017; Miller & Sawatzky, 2017; Shearer, 2016). The study by Cantrell et al. (2017) indicated that while students' experiences of simulation were stressful, most students regarded simulation as a positive learning experience where they gained a better idea of how to cope with

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clinical situations. Performance anxiety experienced with simulation is nervousness or fear preceding or accompanying participation in a particular activity (Miller & Sawatzky, 2017). Strategies to reduce student anxiety during simulation for competency evaluation ensure a more

positive learning environment for the nursing student, increase learning, and make an easier transfer of knowledge and skills to clinical practice (Jeppesen et al., 2017; Miller & Sawatzky, 2017). Some strategies include orientation to the simulated setting (including manikin and equipment), good preparation (faculty and students), frequent simulated experiences for formative and summative evaluation, and providing an environment that promotes safety and reduces the threat of failure (Al-Gharries et al., 2017; Cantrell et al., 2017; Shearer, 2016).

Key Points

- Simulated learning may contribute to student anxiety during skill competency demonstration.
- A form of educational gaming - 'Wheel of Skills' - may enhance simulated learning by offering a stress-reducing activity.
- This innovative strategy can engage generational students and appeal to various learning styles while boosting competence, confidence, relatedness and interest.

Pedagogically, educational gaming is utilized in simulated experiences for nursing students to be actively engaged and take control of their learning process in a positive learning environment, consider strengths and weaknesses, attain desired learning outcomes, and prepare for professional nursing roles (Strickland & Kaylor, 2016; Young, 2018). An innovative learning strategy used at a college of nursing involved a form of educational gaming to reduce performance anxiety and to give the student control with selection of an advanced skill to be used in a simulation for their competency demonstration and evaluation.

Development and Implementation of Wheel of Skills

This baccalaureate nursing program admits approximately 135 students each fall and spring semester. Second-semester junior students participate in an individual low-fidelity simulation within the first 2 weeks of the semester for evaluation of skill competence carried over from their first foundational skills lab. During the semester, there are two video-recorded simulations where students in groups of two or three engage in medical-surgical scenarios to provide patient care with previously learned basic skills, as well as newly learned advanced skills. These recorded videos are available for debriefing as well as individual

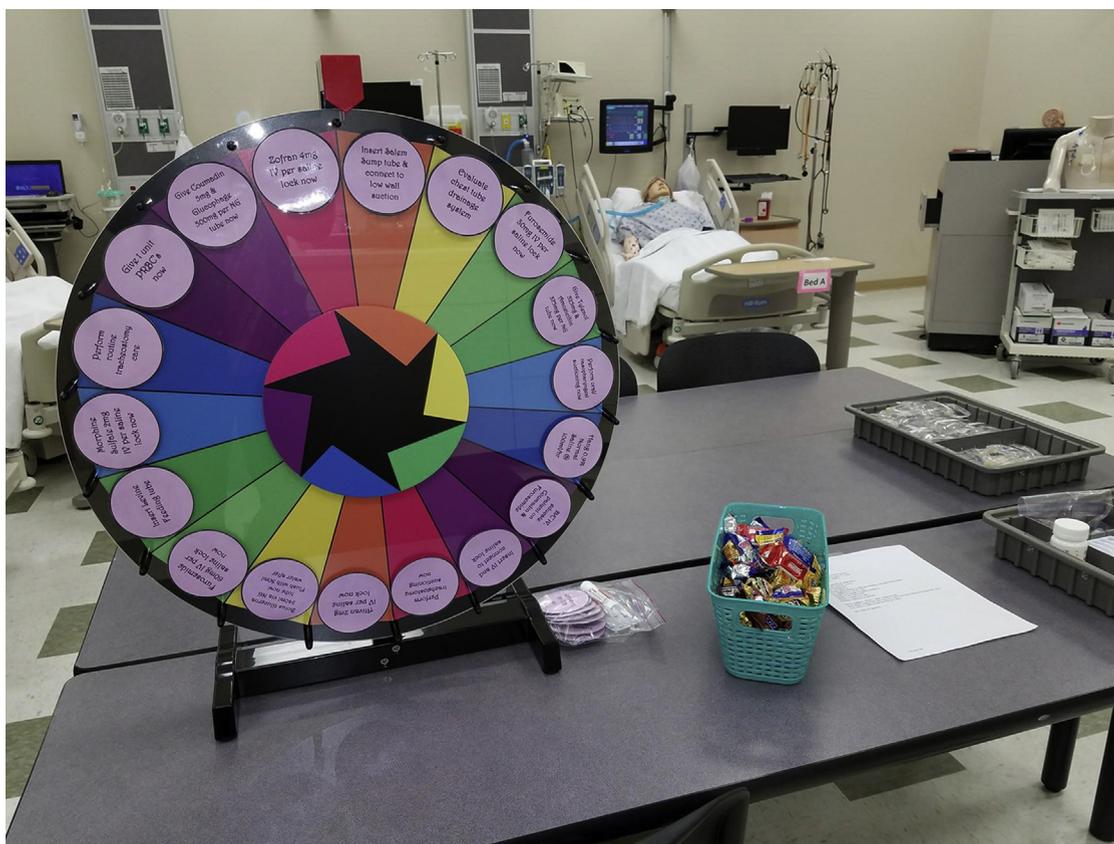


Figure 1 "Wheel of skills."

Advanced Skills & Variations of SkillsManagement of Intra-Vascular Access

Administer Unit of Packed Red Blood Cells
 IV Insert – Begin Saline Lock
 IV Fluids – NS @ 100 ml/hr
 IV Fluids – NS @ 125 ml/hr
 IV Med Admin
 Lasix 30 mg – Direct IV
 Lasix 60 mg – Direct IV
 Zofran 2 mg – Direct IV
 Zofran 4 mg – Direct IV
 Ativan 1 mg – Direct IV
 Ativan 1.5 mg – Direct IV
 Ativan 2 mg – Direct IV
 Morphine Sulfate 2 mg – Direct IV
 Morphine Sulfate 4 mg – Direct IV
 Rocephin 1 gram – IV Piggy Back
 Discontinue IV
 D/C IV & Educate re FSBS (patient discharge)
 D/C IV & Educate re Coumadin & Lasix (patient discharge)

NG/Gastrostomy Tubes

NGT – Med Admin – Glucophage & Coumadin
 NGT – Med Admin – Tylenol & Amoxicillin
 NGT – Feeding - Glucerna
 NGT – Insert Salem Sump – low wall suction
 NGT – Insert Levine tube

Respiratory Care

Tracheostomy Care
 Tracheostomy Suction
 Chest Tube evaluation (site & drainage device)
 Ora-nasopharyngeal Suction

Figure 2 Advanced skills and variation of skills.

student viewing via B-line[®]. The complexity of the high-fidelity scenarios increases as complexity of skills advance. Theory and advanced skills are taught in lecture, reinforced, and practiced in weekly labs and practiced in open-practice lab sessions. The Skills Observation Simulation was added in 2016 advanced foundation curricula to evaluate students' competency for one randomly chosen advanced skill. Students receive a grade for each simulation—5% of course grade for first three scenarios combined and 5% for the SOS.

Wheel of Skills

This gaming strategy using a spinning wheel named “The Wheel of Skills” was implemented in 2018. Created on the WinSpin[®], the Wheel of Skills has 18 slots with a variation of the core set of advanced skills in each slot (See Figure 1.). The core base of advanced skills includes management of intra-vascular access (including blood products), nasogastric/gastrostomy tubes (placement/suction/feeding), and respiratory care (O₂, tracheostomy care, suctioning, chest tubes). The core base of advanced skills has 25 variations to provide students realistic opportunities to demonstrate competence from the core of skills (See Figure 2.). The lab coordinator changes a few variations on the “Wheel” for each lab section.

Students were individually scheduled to complete their SOS during regularly scheduled lab times. A faculty-developed rubric used for evaluation of skill competency and a list of advanced skills were provided for student preparation during lab and lecture and posted on their course Bb. Self-scheduled practice labs were available for skill practice after introduction of content in lecture and lab. Students were required to have 2 hours of practice lab before SOS. On completion of their SOS, students go to a resource center to complete the documentation of their patient care, electronically submit their documentation to faculty, and then return to their assigned lab sections to complete their last lab. All SOS performances were video-recorded and available for student and faculty review as needed.

Spinning the Wheel of Skills

Each student entered the room alone, was greeted by the lab coordinator, spun the wheel to identify the skill to be performed, and prepared to perform the skill. This gaming form of random self-selection was presented in a positive environment as the lab coordinator stood with the students, applauding as per a game show, until the wheel stopped. Once the wheel needle stopped on the skill to be performed, students could ask clarifying questions and were then given a few minutes to prepare for the simulation. The student initiated their simulation by stating when they were “ready to begin” (prompted if over 3-5 minutes) and recorded session began (10-15 minutes). Once the SOS was completed, the students were again greeted by the lab coordinator, directed to choose a small candy prize for completing the skill, and encouraged to view their recorded session. The students then completed documentation and returned to the lab.

Rubric

Students start their SOS by using an acronym introduced in the first and second semesters of the nursing curriculum, WIIAPA, where the students *wash* their hands, *identify* themselves, *identify* the patient, inquire about patient *allergies*, address the patient's *plan* of care and begin patient *assessment*. Possible points are included on the rubric for WIIAPA (20 points), gathering supplies (5 points), performance of skill (50 points), patient safety (5 points), communication (2 points), professional behavior (3 points), and adequate documentation (15 points).

Discussion

Students appreciated “self-selecting” their random skill and overall had positive comments for the “Wheel”—“SOS with the wheel was creative and made things fun.” When SOSs were first added to the advanced

foundations curriculum, the time spent in practice lab increased an average of 5 to 10 hours per student over their junior semester. This increase in practice lab attendance supports the goal of practice and skill mastery at the novice level, coupled with acquisition of cognitive knowledge that allows one to anticipate problems or decide on the next steps (Benner, 2001). Students have increased motivation to learn with simulation in authentically resembled clinical settings and practice to maximize performance of a skill (Jeppesen et al., 2017). In nursing, simulated practice relies on feedback from nursing faculty or lab staff and will ultimately be effective in mastering nursing skills that can be utilized throughout one's career.

This "Wheel of Skills" learning strategy included nursing students at the junior level although it has been replicated at the senior level and with alternate baccalaureate nursing program's SOSs. Consideration can be given for broader use of the "Wheel of Skills" with SOSs to include scenarios that include many skills and skill sets rather than skills acquired in one semester. Students are introduced to the advanced skills they will be evaluated on at the very beginning of the semester and encouraged to prepare with regular and consistent practice every week. It is, in large part, practice that can reassure "It's not as big of a deal."

Conclusion

Nurse educators must be aware of and sensitive to causes of student anxiety with simulated learning. Implementation of strategies to decrease anxiety and enhance learning can engage generational students and appeal to various learning styles. The "Wheel of Skills" can enhance simulated learning by offering a stress-reducing activity while boosting competence, confidence, relatedness, and interest. The empowerment students gain in a positive learning environment prepares them for delivery of safe care in an advanced health care system. The use of SOS

and the "Wheel of Skills" will continue to be evaluated in the junior level curriculum. Application of SOS and variations of the "Wheel of Skills" will be explored across the undergraduate program. It is our hope this learning strategy may be of benefit to other nursing education programs.

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