Evidence-Based Nursing Education: Effective Use of Instructional Design and Simulated Learning Environments to Enhance Knowledge Transfer in Undergraduate Nursing Students

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Much confidence has been placed in the nursing profession's potential to positively impact the U.S. health care system. However, concerns about patient safety and quality beckon health care providers to reassess traditional practices. Professional nursing programs aim to prepare novice nurses with strong clinical skills to effectively and safely care for patients. Faculty shortages and fewer clinical sites for students present challenges to faculty. Limited exposure in the clinical practice setting hinders the development of intuition. In addition, new graduates often enter practice with an unclear understanding of their role at the bedside. Educators are challenged to find innovative teaching strategies to effectively prepare new graduates for entering the workforce. Simulation has been shown to be a valuable teaching–learning strategy. Using an instructional design model that is student centered as the basis for simulation activities in an undergraduate curriculum is one method to effectively provide much needed clinical experience in a safe learning environment. This article details the application of the ADDIE (analysis, design, development, implementation, evaluation) model of instructional design to the use of simulation in nursing education in an effort to facilitate improved clinical performance in new graduate nurses. (Index words: Nursing education; Simulation; Instructional design; Evidence-based; Undergraduate; Knowledge transfer; Safety) J Prof Nurs 29:203–209, 2013.

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DOES THEORY INFORM practice or vice versa? For those who employ a neopragmatic approach to nursing education, the answer is simple—neither. The relationship between the two are intertwined, both giving rise to and a reflection of the other (Warms & Schroeder, 2004). A neopragmatic approach is much more than its utilitarian association would suggest. Neopragmatism focuses on the experience of human beings challenging the notion of epistemic objectivity (Benner, Tanner, & Chesla, 1996; Chinn & Kramer, 2011). A neopragmatic approach seems well suited for nursing, a profession whose core values center on caring for the whole person (physical, psychological, emotional, and spiritual realms). However, in undergraduate nursing education, clinical performance and program success are commonly determined using objective/theory-based assessments with a lesser focus on the subjective human experience. Overlooking the importance of the unique needs of the students (i.e., individual learning styles) can lead to gaps in understanding the relationship between educational preparation and clinical performance (Benner et al., 1996;

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Carrick, 2011). Although many explanations can be offered as rationale for traditional approaches used in nursing education, clinical performance among new graduate nurses suggests room for improvement in academia (Allan & Smith, 2010; Medley & Horne, 2005).

Nurse educators seek to effectively pass on professional beliefs and transfer essential knowledge required to produce graduates capable of rendering safe patient care (Etheridge, 2007; Medley & Horne, 2005). To that end, faculty strive to establish within the student a solid scientific base (often referred to as knowledge) and to impart the art of nursing of which intuition is an integral part (Benner et al., 1996; Chinn & Kramer, 2011). Understandably, the concept of intuition is more difficult to instruct because this form of knowing is personal and abstract, encompassing nursing action, compassion, and focus (White, 2004). However, it is not impossible. According to Rico, Beal, and Davies (2010), exposure and overlearning, which subsequently occurs with situational experience, enhances the development of intuition. Consequently, one can postulate that assimilation of safe nursing judgment and practice is more likely to occur when students are provided exposure to realistic clinical scenarios and opportunities for repeated practice.

A culture of safety is a complex phenomenon and is influenced by leadership, teamwork, evidenced-based practices, communication, learning, justice, and patient-centered care (Sammers, Lykens, Singh, Mains, & Lackan, 2010). Excellence in the aforementioned areas is considered hallmark in high-quality health care institutions. Furthermore, these elements can be captured in the simulated learning environment as teachable moments infused with contextual meaning, thereby heightening the relevance of safe clinical practice. The Institute of Medicine's (IOM, 2001) call for a new and safer health care system makes timing right for the reevaluation of traditional educational approaches in undergraduate nursing programs. The availability of advanced educational technology provides faculty with the tools required to prepare students for complex, dynamic work environments. The use of simulation provides a safe learning environment for students with a variety of opportunities to engage in practical application of the concepts and skills acquired in the nursing program. Moreover, this learning environment facilitates exploration of the consequences of clinical judgments without the fear of actually harming patients. Ultimately, successful knowledge transfer during simulation is based on educators' willingness to venture toward the unfamiliar and invest the necessary time required to carefully plan the learning experience.

The Analysis, Design, Development, Implementation, and Evaluation Model Applied: Simulation in Nursing Education

The traditional analysis, design, development, implementation, and evaluation (ADDIE) model outlines a systematic process that produces evident and sustained results in instruction (Clark, 1995; Gustafson & Branch, 2002; Learning Theories Knowledgebase, 2011). This model serves as a useful tool for curriculum building and educational and practice performance improvement. It provides a useful framework for guiding the development of a student-centered educational innovation that incorporates human simulation into the undergraduate nursing curriculum. A well-planned educational innovation has the potential to better prepare novice nurses for clinical practice. The subsequent discussion details the application of the ADDIE model to the use of simulation in nursing education in an effort to facilitate improved clinical performance in new graduate nurses (Figure 1).

Analysis

The rationale for the desired change in nursing academia is revealed in the analysis phase of the ADDIE model. Preparing students to provide safe and competent care is a priority for nurse educators. Meeting this duty is challenging with content-laden curriculums, faculty shortages, and limited exposure/opportunities for learning in the clinical settings. Regardless of the difficulties, the call for the nursing profession to contribute to performance improvement within the health care system has been issued. Nurse educators are on the front line and well positioned to lead in this effort through preparing graduates that are equipped to meet the demands of a diverse and complex patient population.

Medication errors, skin breakdown, and failure to rescue are among the many significant threats to safety confronting patients under the care of professional nurses (Carrick, 2011; Sammers et al., 2010; Tang, Sheu, Yu, Wei, & Chen, 2007). Medical errors lead to poor patient outcomes and contribute to the public's decreased confidence in health care providers (e.g., nurses). Bedside nurses are in an optimal position to facilitate a culture of safety (Kohn, Corrigan, & Donaldson, 2000). According to Maynard (1996), staff competence that is evidenced by skill proficiency and good clinical judgment hastens the development of a culture of safety and is essential for implementing best practice. Of particular concern are reports that only one out of five new graduate nurses entering the workforce are prepared with the skills and clinical judgment necessary to care for patients in today's complex health environment (Nurse Executive Watch, 2008). Tanner (2006) asserts that experience is necessary for nurses to understand clinical situations and to recognize significant patient cues. However, because of workforce shortages and fiscal demands placed upon health care organizations, novice nurses are seldom afforded the opportunity of gaining adequate practice experience under the protection of a safety net (Carrick, 2011; Page, 2004; Romyn et al., 2009). Successful completion of qualifying examinations in nursing (i.e., National Council Licensure Examination–Registered Nurse [NCLEX-RN]) reflect minimum competence. Unfortunately, it is becoming evident, through health