

# Full integration of simulation in an associate degree nursing program<sup>1</sup>



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## Abstract

To meet the ever increasing learning needs of associate degree nursing students, a team of faculty and staff developed a plan to integrate simulation throughout the curriculum. Using a systematic process, the team created simulations for laboratory, clinical, and didactic courses. The simulations were designed to fill identified gaps in clinical experiences and reinforce patient safety, assessment, prioritization, communication, and collaboration skills.

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The use of simulation is driven by an increased need for clinical experiences for students, opportunities to develop critical thinking, and development of communication and collaboration skills essential to patient safety and teamwork. In many nursing education settings in the past, simulation equipment was purchased and underutilized because of a lack of knowledge by the faculty or support from the school of nursing. Today national and international organizations such as the Society for Simulation in Healthcare, International Nursing Association for Clinical Simulation & Learning, and National League for Nursing offer support for the utilization of simulation modalities in nursing education. Simulation modalities such as task trainers, standardized patients, role-playing, low-fidelity mannequins, and high-fidelity human patient simulators (HPSs) are being used for many types of instruction in schools of nursing.

Administrators and faculty are embracing the vast opportunities simulation experiences can provide nursing students. Simulation laboratories are being built, and equipment is being procured to meet the needs of students. Educators are being coached and trained in using simulation techniques as a teaching strategy. However, for simulation to be an effective teaching modality in schools of nursing, it needs to be integrated in a nursing curriculum. The process of integrating simulation into a community college nursing curriculum was described by Hyland, Weeks, Ficorelli, and Vanderbeek-Warren (2013). They used simulation experiences to provide students with high-risk/low-volume events unavailable in clinical settings. Irwin (2011) described the process of integrating simulation in a multisite associate degree nursing program. She effectively applied the Diffusion of Innovations theory (Rogers, 2003) as a framework for the process. She described in detail the application of this theory for integrating simulation in courses over a 3-year process. Starkweather and Kardong-Edgren (2008) also used the Diffusion of Innovations theory to increase faculty buy-in to simulation in a large multisite baccalaureate nursing program. For this project, they initiated simulation along with faculty support for using simulation in their teaching beginning with one class of

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students on two campuses. In the first year, a 30% increase occurred in student exposure to simulation. Similarly, Howard, Englert, Kameg, and Perozzi (2011) described the integration of simulation in a baccalaureate program. They evaluated student and faculty perceptions of simulation as a teaching strategy. Faculty evaluations included recommendations of having a dedicated simulation coordinator or champion, technological support, adequate facilities, and workload release time for nursing faculty to develop their knowledge about simulation and its use in teaching.

These examples indicated that integrating simulation throughout a nursing curriculum can be a time-consuming and laborious process. Benner, Sutphen, Leonard, and Day (2010) proposed using simulation to broaden clinical experiences, to keep the student focus on patient experiences, and to vary assessment methods of nursing students. To accomplish these goals, the approach to simulation within a curriculum must be broad and varied. Simulation can be used in all types of courses with all levels of students.

In our associate degree nursing program, our goal was to fully integrate simulation across the curriculum. We planned and created simulation experiences to occur in every quarter and in varied types of courses; didactic, clinical, and laboratory. The process we used to achieve this success followed Ravert's (2012) seven-phased integration map involving team formation, analysis, planning, resource development, implementation, and evaluation with revisions. This article describes the use of this process by faculty and staff in an associate degree nursing program to integrate simulation throughout the curriculum.

## 1. Integration team formation

At the beginning of the process, a team needs to be formed to oversee the planning. Our Integration Team (Ravert, 2012) began as a Technology Task Force, a work group within the nursing department Curriculum Committee. Among the original members of this task force were two innovators (Rogers, 2003) in simulation along with the associate dean. The task force evolved into a free-standing Technology Committee within the nursing department that now oversees the continuing evaluation and plan revisions. Examples in the literature and in other nursing programs as well as the enthusiasm of the early adopters (Rogers, 2003) on the committee led to the creation of the vision of integration across the curriculum with students participating in at least one simulation each quarter.

## 2. Analysis

The committee identified gaps in student learning experiences. These gaps were found through interviews with faculty members teaching in the clinical setting and classroom. Faculty readily shared recurrent student weaknesses and missed clinical opportunities. Input was also sought from nurses in practice

and clinical partners as well as current and past students. The committee obtained this input through interviews and review of student comments on course evaluations. NCLEX-RN program reports were analyzed to determine if gaps of graduate performance on the NCLEX could be addressed with simulation. The initial recurrent student gaps in learning were observed in the medical–surgical area related to both the safety and organization of medication administration and prioritization of care. The main areas of clinical opportunities underrepresented were in pediatrics, especially inpatient care of children. Gaps were also identified in the maternity nursing clinical course, as students were occasionally unable to observe the entire labor and delivery process.

Faculty, staff, and equipment were also analyzed to determine what was currently available and what could be needed in the future. Findings of this analysis included a high-fidelity HPS that had been given to the school as a gift and used for one simulation in one course per year. Other mannequins in the laboratory included a mid-fidelity obstetric mannequin and a low-fidelity pediatric mannequin that were used occasionally for demonstrations of care. Having moved the laboratory to a temporary site on campus, all other equipment had been recently inventoried. Video capture equipment also existed in the lab.

Faculty and staff resources included a part-time position that had been recently created with the role of lab resource nurse (LRN). The role of this person was to support the laboratory activities and faculty. Permanent funding and expansion of this position were being sought after by the associate dean. The need to acquire a high-fidelity pediatric HPS was identified. Funding for a pediatric HPS was also sought after but appeared to be in the far future. One of the nine full-time faculty and the current LRN had some previous experience in the use of simulation in nursing education. Another faculty had extensive experience with experiential learning methods outside of nursing education.

## 3. Plan for implementation

After reviewing the current resources, the plan for implementing simulation began with a broad overall goal, which was to incorporate at least one simulation experience into each of the six quarters of the nursing program. The plan included the development of simulation scenarios addressing assessment, oral, subcutaneous, and gastrostomy tube medication administration, pediatrics, maternity, intravenous medication administration, and advanced medical surgical issues. Initially, the format provided by the HPS manufacturer was used for the scenario development. A basic pre-brief/scenario/debrief format was selected for use in each simulation. It was decided to video-record the scenarios for viewing after the simulation if needed; however, because of time constraints, these recordings were not to be a standard component of debriefing. Scheduling of the simulations was determined by the availability of the LRN and the faculty's schedule.

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