

Deliberate Practice Through Simulation

Project Description

The purpose of the Nursing Skills Center Project is to enhance the quality of skill acquisition, critical thinking, and clinical decision making through the use of simulation with debriefing and deliberate practice. This combination of approaches allows students to make and correct errors and learn from those errors without to patients. The transfer of this learning into the clinical setting improves levels of clinical performance in undergraduate nursing students preparing for entry to practice. The aims of the project are to:

- a. To increase the number of high fidelity simulators available to students for use during simulated clinical experiences.
- b. To facilitate the integration of deliberate practice activities into the curriculum in order to facilitate high-level clinical thinking and decision making rather than the practice of learning isolated psychomotor skills.
- c. To increase the availability of simulators for the training of faculty in the administration of highly complex clinical scenarios.

Impact of this Project on Instruction

This project will expand the availability of high fidelity patient care simulators in the clinical skills lab for use by undergraduate nursing students. It also increases the number of simulators available for training faculty in use of simulation. Fidelity is also known as realism, or the degree to which a simulated experience approaches reality. When an increase in fidelity occurs, realism increases (Dieckman, Gaba, & Rall, 2007), and thus students experience a greater level of buy-in during simulated patient care experiences. Currently, the College of Nursing competes with the other nursing programs in the region for clinical placement in healthcare facilities. These placements are highly limited. In order to augment the clinical learning of our students, and increase their readiness for practice, it is essential that the College enhance our ability to offer clinical experiences in the simulation lab.

The primary courses that integrate simulation are in the first semester of the nursing program. This is a period that is vital to skill acquisition and preparation for practice in local hospitals. Annual enrollment in 3056L Foundations of Nursing Practice and 3065L Health Assessment, Wellness and Prevention Across the Lifespan Lab is 120. There are currently 2 medium-fidelity simulators in each room available for each lab section for 3056L Foundations of Nursing Practice and 3065L Health Assessment, Wellness and Prevention Across the Lifespan Lab. Each clinical section is capped at 10 students, resulting in a 5 student-to-1 simulator ratio. These simulators allow for true-to-life care administration. Students can assess the simulator as if it were a real human being, and administer care in a way identical to that seen in a hospital.

Advanced undergraduate students, as well, engage in simulation as a way to re-create high-acuity events, for instance, the care of a patient suffering from a cardiac arrest. Availability of increased numbers of simulators will additionally allow for additional practice by the student enrolled in 3225L Nursing Care of the Adult with Acute and Chronic Health Disorders prior to hospital clinical. The College of Nursing has committed to designing active instruction, based on deliberate practice and/or knowledge acquisition. Decreasing the student to simulator ratio in each clinical section, will allow the students to practice in a 2 student-to-1 simulator ratio. This will facilitate increased student motivation

to perform, appropriate leveling of the simulation, constructive faculty facilitation and increased feedback. Higher ratios do not allow for appropriate levels of individual student feedback in a way appropriate to a deliberate practice based approach.

Project Plan

Studies have shown knowledge obtained in simulation, following national guidelines (NCSBN, INASCL), transfers to the clinical setting (Hayden, Smiley, Alexander, Kardong-Edgren, & Jefferies, 2014). Both national guidelines and State rules allow for substituting simulation for live clinical hours in traditional hospital settings. The College of Nursing has adopted the use of simulation to augment teaching in didactic courses, and in some cases to augment hours for clinical learning.

During the first semester of the program a new course will be offered that integrates assessment and care administration skills using a deliberate practice framework. During this course students will assess patients in a high-fidelity simulated environment and provide care using skills gained in their other courses. This approach goes well beyond traditional nursing courses that require only the rote repetition of psychomotor skills. This course will build the foundation for clinical decision making skills early in the program. During this course students will be evaluated by and receive feedback from faculty, Teaching Assistants (TA) and student mentors. Focused care will include health assessment, error-free, safe patient care, nursing skills and critical thinking. Faculty, TAs and student mentors from the senior leadership course will be assigned to sections to facilitate practice and to provide feedback as students practice simulations.

The scenarios will integrate national (NCSBN and INASCL) standards based evidence-based recommendations for simulation in nursing. Faculty will create a bank of simulation assignments, which will add to the existing assignments and incorporate the standards. The components of these simulations will include:

- a. Measurable semester objectives and course objectives
- b. Facilitator/Facilitative approach
- c. Briefing criteria
- d. Feedback criteria
- e. Debriefing procedures
- f. Evaluation criteria
- g. Participant preparation (Lioce, Meakim, Fey, Chmil, Mariani, & Alinier, 2015)

Timeline

Date	Activity and Method of Delivery	(Person Responsible)
Dec. 2016	Draft 1 Simulation plan for Junior Semester	Junior semester Faculty
Jan. 2017	Revision 1: Simulation plan for Junior Semester to Curriculum Committee Identify faculty and TA to participate in Fall 2017 courses	Dr. Hauber
Feb. 2017	To Faculty Organization to send to University Curriculum Draft 1 of Week 1-7 simulations	M. Whyte M. Whyte and R. Brewer Junior semester Faculty

Date	Activity and Method of Delivery	(Person Responsible)
	Develop Evaluation plan	Implementation Team
	Schedule faculty training	M. Whyte
	Revisions to Week 1-7 simulations	Implementation Team Junior semester Faculty
March, 2017	Submit proposed evaluation to FSU Human Subjects Review committee and Institutional Review Board.	Evaluation Team
	Funds Awarded	
April, 2017	Simulators ordered	M. Whyte
	Draft 1 of week 8-15 simulations	M. Whyte and R. Brewer Junior semester Faculty
	Faculty/TA simulation training	M. Whyte
	Revisions to Week 8-15 simulations	Implementation Team Junior semester Faculty
May, 2017	Faculty/TA simulation training	M. Whyte
	Revise Evaluation Plan	Implementation Team
	Prepare simulation center environment in preparation for the arrival of students	M. Whyte and R. Brewer
July, 2017	ABSN/VBSN mentor training	M. Whyte and R. Brewer
July, 2017 Aug., 2017	Faculty, TA training	M. Whyte and R. Brewer
	Implementation TEAM meeting (ABSN/VBSN, faculty, TA, evaluation team)	M. Whyte, R. Brewer, T. Winton Junior semester Faculty
Aug., 2017	Implement simulations 1-15	Implementation team Junior semester Faculty
Fall Semester	Mid term evaluation of Project	Implementation and Evaluation team
October	Implementation team and Evaluation Team to evaluate mid year Review process Review outcome data and evaluation	Implementation and Evaluation Team
December	Training for new faculty and Traditional student mentors	R. Brewer and M. Whyte
	Implement simulations 1-15	Implementation team
Spring 2018	Mid term evaluation of Project	Implementation and Evaluation team
March 2018	Implementation team and Evaluation committee to evaluate mid year Review process Review outcome data and evaluation	Implementation and Evaluation Team

Date	Activity and Method of Delivery	(Person Responsible)
April, 2018	Training for new faculty and Traditional student mentors	R. Brewer and M. Whyte
	Prepare simulation center environment in preparation for the arrival of students	M. Whyte and R. Brewer
July, 2018	ABSN/VBSN mentor training	M. Whyte and R. Brewer
July, 2018	Faculty, TA training	M. Whyte and R. Brewer
Aug., 2018	Implementation TEAM meeting (ABSN/VBSN, faculty, TA, evaluation team)	M. Whyte, R. Brewer, T. Winton
Aug., 2018	Implementation TEAM meeting (ABSN/VBSN, faculty, TA, evaluation team)	M. Whyte, R. Brewer, T. Winton

Evaluation

The evaluation plan for the Nursing Skills Center Project will focus on several areas. Our focus is to determine changes in outcomes that are measurable. Data for the three years preceding the associated curricular and infrastructure changes will be compared to outcomes on a per semester basis. Our evaluation will include:

- a. Comparison of standardized test scores for cohorts before and after the implementation of our enhanced approach to simulation in the applicable courses.
- b. Comparison of faculty clinical evaluations for semester 2 and 3 clinical coursework as a way of identifying changes in faculty ratings of students before and after the implementation of our enhanced approach to simulation.
- c. Comparison for student evaluations for clinical courses offered during semester one, before and after before and after the implementation of our enhanced approach to simulation.

Relationship to other University Activities

This project aligns with the critical thinking initiatives Pre-simulation, pre-briefing and use of protocols and evidence-based guidelines during simulation allows for employing evidence. In simulation the students identify a problem, develop a hypothesis and use resources to complete required tasks. During post conference through directed facilitation and debriefing, the students will be provided with opportunities to analyze assumptions and carefully evaluates the relevance of contexts and will allow for the ability to see through others viewpoint.

How these activities will be enhanced and or Leveraged

Cost of ongoing support and a plan for supporting the effort

The simulators and controllers have an annual fee associated with the warranties and consumables. Below is a list of those ongoing fees.

Year 1

Year 2

	per unit	Extended
SimPad Plus Protection Plan	\$832.00	\$9,984.00
Nursing Anne extended	\$489.00	\$3,912.00
IV Skin and Veins	\$200.00	\$1,600.00
		\$15,496.00

	per unit	Extended
SimPad Plus Protection Plan	\$832.00	\$9,984.00
Nursing Anne extended	\$489.00	\$3,912.00
IV Skin and Veins	\$200.00	\$1,600.00
Blood Pressure Cuffs	\$159.00	\$1,272.00
		\$16,768.00

Description of the project team

The project team will have three groups. The faculty teaching in the junior semesters will create the simulations. The faculty, TAs and student mentors will implement the scenarios using the pre-briefing, simulation/facilitation and debriefing plan. The Implementation team will be responsible for developing the simulation tools used in the evaluation plan and the training plan for faculty, TA and Student mentors. The evaluation team will be responsible for evaluating the outcomes of the project.

Faculty	Title	Role 1	Role 2	Role 3
Maria Whyte	Teaching Faculty II	Implementation Team	Evaluation Team	Simulation Coordinator
Ronnie Brewer	Teaching Faculty I	Implementation Team	Evaluation Team	Lab Coordinator
Teresa Winton	Teaching Faculty I	Implementation Team		Lead Faculty for Foundations Lab
Roxanne Hauber	Associate Professor Associate Dean		Evaluation Team	
Denise Tucker	Teaching Faculty III	Implementation Team	Evaluation Team	
So Hyun Park	Assistant Professor		Evaluation Team	
Jim Whyte	Associate Professor		Evaluation Team	
TBD				Junior semester Faculty

Budget and Budget explanation/justification

The total proposal cost is \$124,215.20 for the purchase and implementation of Laerdal Nursing Anne Simulator with SimPad PLUS and LLEAP.

- Nursing Anne is a manikin designed for scenario-based training for the care and management of basic patient handling skills to advanced nursing skills.
- The SimPad PLUS is the controller for Nursing Anne, it sends the heart rate, Blood pressure, sound and record time stamped notes. The SimPad PLUS log files and captured video can be

viewed on the SimPad PLUS device for post-simulation reflection, debriefing and data collection.

- c. The LLEAP software allows the creation of simulations using guidelines, initiate video capture and download video for debriefing and data collection.