

# Team Based Learning with Virtual and Manikin Simulation

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## Introduction

Office of the Provost Hybrid Learning Course Redesign and Delivery Teaching and Learning Award 2017  
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- The pace of the accelerated Master's Direct Entry Nursing program requires new nursing students to rapidly develop competency in clinical decision-making, a core critical-thinking skill necessary for professional nursing practice.
- A new teaching strategy integrated team-based learning, virtual simulation, and manikin simulation into a serial learning experience resulting in new students readily assimilating the nursing process as the organizing framework for critical-thinking in nursing, and facilitated improved clinical decision-making during patient care.

## Team-Based Learning

- Student-centered active learning strategy which yields strong student engagement in course content through advance preparation, class discussion, and team interaction in the application of course concepts.



## The Students

- 209 prelicensure nursing students → 40 teams  
Project began on the third day of the program and continued weekly (six) through June and July.
- ✓ Team charter
  - ✓ Peer Evaluation
- Each week students completed independent and team scaffolded assignments.
- Brief flipped lecture, narrated in PowerPoint
  - Virtual Simulation with embedded activities
    - ☉ Team manikin mini-simulation
    - ☉ Team quiz
    - ☉ Team care plan
- Summative assessment: Cumulative final exam



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## Virtual Simulation

- Standardized patient videos – a dynamic representation of a patient encounter and nursing practice in action to facilitate students' comprehension of the critical thinking that occurs during each step of the nursing process
- were incorporated with
- Computer generated learning and assessment activities geared to improving students' higher order thinking skills and performance.



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## Manikin Mini-simulation

- Simulation employs a variety of technologies to offer learners realistic clinical situations and provides the opportunity to practice and learn in a safe environment. Facilitated reflective thinking during the debriefing step is critical for developing/improving clinical reasoning skills.
- A high-fidelity, life-size computerized manikin was programmed with physiologic responses. Faculty and teaching assistants responded to students as the patient through audio channels.
- 10 minute mini-simulations were followed by 20 minute debriefing sessions led by faculty.
- The Debriefing with Meaningful Learning (DML) method of Socratic questioning with guided reflection stimulated students' initial development of nursing judgment and prompted understanding of clinical reasoning contextually.



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## Results

- Students expressed satisfaction with TBL.
- 95% of teams (n=40) worked well together with occasional minor conflicts resolved through the team charter process. Two teams required periodic intervention by teaching assistants or faculty to interact and to complete assignments.
- Teams engaged with the learning strategy and exhibited rapport with "Mr. Venegas" manikin.
- Students demonstrated improved readiness to engage with patients at the bedside and perform nursing interventions in clinical rotation.
- Robust care plans submitted by teams through the initial clinical nursing course. Students' individual care plans submitted in subsequent specialty clinical nursing courses continued to demonstrate robust development of nursing judgment and clinical decision-making.
- Scores improved on nursing process items on cumulative final exam.

## References

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