Integrating Increasingly Complex Simulation into a Junior II Level course in a BSN Program to Provide students with an active learning strategy to reinforce learning

Tina M. Dorau, MSN, RN, CRRN
Disclosures and Objectives

The Authors
Tina M. Dorau, MSN, RN, CRRN
Barbara Gawron, RN, DNP, CNE, CHSE
Karen Obrien, MSN, RN, CNE.

- There are no conflict of interests to report.
- At the time of this project I was attending Benedictine University and completing my MSN and completed my Capstone Project at Saint Xavier University
- I currently work as an Adjunct Faculty for Saint Xavier University School of Nursing.
- I was awarded a stipend from Saint Xavier University Adjunct Faculty Board and I am receiving sponsorship from Alpha Omicron Chapter, STTI.

- The Learners will be able to recognize the need for alternative educational pedagogies and identify three ways simulation can enhance learning by the end of the session.
- The Learners will be able to identify simulation scenarios that are designed with the level of the student in mind.
Purpose and Scope

- Integration of High Fidelity Simulation (HFS) into a Junior II Med-Surg Course
- Improve students’ satisfaction in learning and confidence
- Hands-on practice to improve clinical skills
- Promote application of theoretical knowledge in a life-like situation
- Simulation scenarios developed for the Junior II level nursing students
- Sustainability
Relevance of the Project

- Impact the Junior II level Med-Surg Course
- Alternative to traditional lecture and onsite clinical
- Students have consistent clinical experiences
- Opportunity to practice in a safe environment
- Builds confidence in skill performance and application of knowledge to the clinical setting
- Adds to the evidence: NCSBN
Theory, Model, and Conceptual Framework

- **Five Major Constructs**
  - Facilitator
  - Participant
  - Educational Practices
  - Outcomes
  - Simulation Design Characteristics

The NLN/Jeffries Simulation Framework has been used with permission from the NLN (Jeffries, 2012).
Preparation for the project began in Spring of 2014.

- Simulation Scenarios were developed
- Patient charts were made
- Simulation scenarios were piloted
- High Fidelity SimMan 3G manikins were utilized

Scenarios were developed with increasing complexity

- Requiring assessment of an initial problem
- Implementation of interventions
- Evaluation/re-assessment
- Each scenario became more complex
Project Implementation

The Scenarios Concepts Included were:
- #1 Perfusion and Oxygenation
- #2 Metabolism and Acid/Base Balance
- #3 Fluid and Electrolyte Balance

Project took place in fall of 2014 during a traditional 16 week semester
- The participants consisted of 12 Accelerated and 71 Traditional
- Three Scenarios were integrated into the course for the accelerated students
- Two simulations were integrated into the course for the traditional
Implementation

- Instructor Guides for Student Progression through the simulations were developed
  - Time on task
  - Correct assessments
  - Appropriate skills performed

- Debriefing
  - Clinical Faculty Involvement
  - Tool from the NLN
  - Allowed students a forum to discuss thoughts and feelings
  - Survey
Evaluation Methods

Facilitator Observation
- Instructor Guide to student progression through the simulation

ATI skills checklists
- Observing for proper procedure

Guided debriefing
- Open Ended Debriefing Template from the NLN

Surveys
- Student satisfaction and Self Confidence in Learning
- Educational Practices Questionnaire (Student Edition)
## Results

### Scenario #1 Accelerated

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0%</td>
<td>91.00%</td>
<td>91.00%</td>
</tr>
<tr>
<td>2</td>
<td>20%</td>
<td>70.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>3</td>
<td>9%</td>
<td>73.00%</td>
<td>82.00%</td>
</tr>
<tr>
<td>4</td>
<td>9%</td>
<td>73.00%</td>
<td>82.00%</td>
</tr>
<tr>
<td>5</td>
<td>27%</td>
<td>64.00%</td>
<td>91.00%</td>
</tr>
<tr>
<td>6</td>
<td>64%</td>
<td>9.00%</td>
<td>73.00%</td>
</tr>
<tr>
<td>7</td>
<td>9%</td>
<td>73.00%</td>
<td>82.00%</td>
</tr>
<tr>
<td>8</td>
<td>36%</td>
<td>18.00%</td>
<td>54.00%</td>
</tr>
<tr>
<td>9</td>
<td>64%</td>
<td>27.00%</td>
<td>91.00%</td>
</tr>
<tr>
<td>10</td>
<td>10%</td>
<td>70.00%</td>
<td>80.00%</td>
</tr>
<tr>
<td>11</td>
<td>18%</td>
<td>64.00%</td>
<td>82.00%</td>
</tr>
<tr>
<td>12</td>
<td>36%</td>
<td>45.00%</td>
<td>81.00%</td>
</tr>
<tr>
<td>13</td>
<td>18%</td>
<td>45.00%</td>
<td>63.00%</td>
</tr>
</tbody>
</table>

- Total students who completed survey $n=11$
- Data demonstrates that simulation increases self confidence **90%**
- Data indicates that simulation increases satisfaction in learning **82%**
<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Neutral</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30.00%</td>
<td>60.00%</td>
<td>10.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>2</td>
<td>30.00%</td>
<td>70.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>3</td>
<td>10.00%</td>
<td>80.00%</td>
<td>10.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>4</td>
<td>30.00%</td>
<td>70.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>5</td>
<td>10.00%</td>
<td>80.00%</td>
<td>10.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>6</td>
<td>40.00%</td>
<td>50.00%</td>
<td>10.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>7</td>
<td>20.00%</td>
<td>60.00%</td>
<td>20.00%</td>
<td>80.00%</td>
</tr>
<tr>
<td>8</td>
<td>20.00%</td>
<td>60.00%</td>
<td>20.00%</td>
<td>80.00%</td>
</tr>
<tr>
<td>9</td>
<td>20.00%</td>
<td>80.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>10</td>
<td>30.00%</td>
<td>60.00%</td>
<td>0.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>11</td>
<td>30.00%</td>
<td>60.00%</td>
<td>0.00%</td>
<td>90.00%</td>
</tr>
<tr>
<td>12</td>
<td>20.00%</td>
<td>80.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>13</td>
<td>20.00%</td>
<td>50.00%</td>
<td>30.00%</td>
<td>70.00%</td>
</tr>
</tbody>
</table>

- Total students who completed survey n=10
- Data demonstrates that simulation increases self confidence 100%
- Data indicates that simulation increases satisfaction in learning 80%
## Results

### Traditional BSN Students

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>63.6%</td>
<td>30.3%</td>
<td>93.9%</td>
</tr>
<tr>
<td>2</td>
<td>60.6%</td>
<td>33.3%</td>
<td>93.9%</td>
</tr>
<tr>
<td>3</td>
<td>58.0%</td>
<td>32.0%</td>
<td>90.0%</td>
</tr>
<tr>
<td>4</td>
<td>59.1%</td>
<td>33.3%</td>
<td>92.4%</td>
</tr>
<tr>
<td>5</td>
<td>56.0%</td>
<td>29.0%</td>
<td>85.0%</td>
</tr>
<tr>
<td>6</td>
<td>24.0%</td>
<td>48.0%</td>
<td>72.0%</td>
</tr>
<tr>
<td>7</td>
<td>59.0%</td>
<td>36.0%</td>
<td>95.0%</td>
</tr>
<tr>
<td>8</td>
<td>45.0%</td>
<td>48.0%</td>
<td>93.0%</td>
</tr>
<tr>
<td>9</td>
<td>59.0%</td>
<td>29.0%</td>
<td>88.0%</td>
</tr>
<tr>
<td>10</td>
<td>71.0%</td>
<td>26.0%</td>
<td>97.0%</td>
</tr>
<tr>
<td>11</td>
<td>66.0%</td>
<td>28.0%</td>
<td>94.0%</td>
</tr>
<tr>
<td>12</td>
<td>50.0%</td>
<td>42.0%</td>
<td>92.0%</td>
</tr>
<tr>
<td>13</td>
<td>36.0%</td>
<td>27.0%</td>
<td>63.0%</td>
</tr>
</tbody>
</table>

- Total students who completed survey n=66
- Data demonstrates that simulation increases self confidence **93.9%**
- Data indicates that simulation increases satisfaction in learning **95.0%**
The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.

I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.

It is the instructor’s responsibility to tell me what I need to learn of the simulation activity content during class time.

93.9%

95%

63%
Discussion

“...was positive, although I felt I did not perform well”

“...was able to apply my knowledge”

“..want to do more simulation”

Results
Sustainability
Barriers
Conclusion

Simulation has been used for many years in other fields.

There is a shortage of Nursing staff and Nurse Educators.

There is a growing body of evidence supporting the use of simulation.

The availability of Clinical sites is becoming scarce.

There are many changes in the healthcare system.
References

References

References

The End

Thank You