Abstract
This nursing program undertook a program assessment in response to identified weakness in nursing students' clinical competence. This study examined clinical competency of three groups of students (n=236) in their ability to assess vital signs at the conclusion of a Health Assessment course. Using a high-fidelity manikin, a clinical scenario and a tool developed by the Regional Simulation Center, faculty evaluated each sophomore nursing student’s ability to competently assess vital signs.

Competency was defined as the ability to both accurately take vital signs on a manikin and to interpret the meaning of those vital signs within the context of a clinical scenario.

Clinical scenario included the following subjective and objective data:
A 25-year-old male presents to the emergency department. He complains that he has been vomiting for the past two days and has not been able to keep foods or fluids down. He also reports experiencing watery diarrhea the past day. He does not report history of travel, eating unusual food or anyone else in the family being sick. Vital signs preprogrammed on the high-fidelity manikin included a temperature of 99.4; blood pressure of 90/54; pulse of 120; and respiratory rate of 22.

Methods
Research Design
Non-experimental design
Posttest-only design

Independent variable: Teaching Method (simulated versus traditional)

Dependent variable: Learning Outcome (competent to assess vital signs)

Sample: Purposive convenience sample of 236 sophomore Nursing Students

Data Collection
Data Group A: Fall Semester 2008
Data Group B: Spring Semester 2009
Data Group C: Spring Semester 2010

Instrument:
Vital Sign Validation Competency Validation Tool *
*North Texas Regional Simulation Center

The findings of this study validated concerns and provided the nursing program with information useful for making program changes. A small percentage of nursing students in the first two semesters (n=159, 21%) demonstrated competency in the assessment of vital signs. These results raised “red flags” and resulted in program changes. The third group demonstrated marked improvement with 84% of the 77 students found to be competent in the assessment of vital signs.

Comparison of Competency Validation

<table>
<thead>
<tr>
<th>Groups</th>
<th>Competent</th>
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<tbody>
<tr>
<td>Learning Lab</td>
<td>23%</td>
</tr>
<tr>
<td>Simulation</td>
<td>20%</td>
</tr>
<tr>
<td>Program Changes</td>
<td>84%</td>
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<tr>
<td>n=71</td>
<td>n=88</td>
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</tbody>
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This study addresses NLN core competencies regarding the need for educators to use assessment and evaluation strategies (NLN, 2005) to include the clinical setting. This study shares results of using technology to identify program weaknesses by describing how the nursing program used high-fidelity manikins, a clinical scenario and the Vital Sign Competency Validation Tool * to evaluate nursing students' ability to competently assess vital signs. Significant improvements in individual learner competency resulted from program changes. The significant benefits of this study extend the literature on the value of program assessment and demonstrates how to use technology to improve quality in clinical learning outcomes. By using either low or high fidelity manikins, a quality clinical scenario and a valid measurement tool nurse educators can collect objective data on clinical competency.

Implications
A Competency Validation Tool to measure competence in the assessment of vital signs provides an example for nurse educators to plan and implement more advanced clinical competencies within their own nursing programs. This study demonstrates the usefulness of simulation to diagnose competency gaps among nursing students and may prove useful to educators as they identify deficits during their own program assessments.

Bibliography