Effectiveness of Integrating Test-Enhanced Learning into a BSN Foundations of Nursing Class: A Pilot Project.

Greta I. Marek, DNP, RN, CNE
Laura Dower, MSN, FNP, RN, CNE
Disclosure

• Presenters have no actual or potential conflicts of interest

• No sponsorship or commercial support was received
Objectives

1) Explain what test-enhanced learning is

2) Describe three advantages of test-enhanced learning
Purpose

To assist student learning by incorporating weekly post-lecture quizzes in an effort to increase the spacing time of studying.
Identified Problems

1) Students not prepared
2) Procrastination
3) Attempting to cram
4) Poor retention
5) Matriculation
6) Grades
Test-Enhanced Learning (TEL)

“Process that involves learners repeatedly retrieving information through tests, which results in superior long-term retention”
(Larson, Butler, & Roediger, 2013, p. 675).

“Assessment drives learning”
(Cantillon, 2008, p. 954).
Test-Enhanced Learning (TEL)

“Taking a test on studied material promotes subsequent learning and retention of that material on a final test (termed the testing effect)”

Hypothesis

Weekly quizzes would increase the frequency/time a student spent studying, resulting in better long-term retention of information and matriculation.
Course Integration

1) Weekly, online quizzes
2) Computerized
3) Randomized
4) 10 questions, 15 min, 5 min review
   • ADA compliant
5) At home
6) 48 hours to complete
   • Noon Thursday – noon Sunday
7) Immediate review of incorrect
Ethics

1) Required exception to Family Educational Rights and Privacy Act (FERPA), in order to release students’ records

2) Institutional IRB approval obtained
Design

1) Pretest-posttest study design

2) Three retrospective sets of data from 2\textsuperscript{nd} semester BSN students; fall 2013 (n = 105) & spring 2014 (n = 78)

3) Standard teaching/learning strategies 2013 (pretest group), TEL implemented spring 2014 (posttest group)
Data Gathered

1) Assessment Technologies Institute (ATI) Registered Nurse (RN) Content Mastery Exam for Fundamentals

2) Number of students with grade <75 prior to the final exam

3) Number of students that failed course.
# Results

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total # of students</th>
<th>ATI end of course test</th>
<th># &lt; 75 before final exam</th>
<th>Total # of course failures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Level 3</td>
<td>%</td>
<td>* Level 2</td>
</tr>
<tr>
<td>‡ Spring 2014 + TEL</td>
<td>78</td>
<td>18</td>
<td>23%</td>
<td>46</td>
</tr>
<tr>
<td>† Fall 2013</td>
<td>105</td>
<td>6</td>
<td>6%</td>
<td>61</td>
</tr>
</tbody>
</table>

† Traditional students + accelerated students
‡ Traditional students only
* Passing
Findings

Positive impact on:

• Retention
• Exam scores
• Matriculation
• Student satisfaction

Additional benefits:

• Test-taking techniques
• Testing anxiety
Limitations

1) Study was not randomized
2) Small sample size
3) Conducted at single institution
4) In a single course.
Lessons Learned

1) Cheating
2) IT issues
3) Planning
4) Test bank
5) Computer lab
Conclusion

1) Faculty are encouraged to integrate TEL in courses to support student success.

2) TEL was found to support student success.

3) More research is needed.
Questions?
References

