TECHNOLOGY COMPETENCE AND ONLINE TEACHING EFFICACY: HOW CAN QM MAKE A DIFFERENCE?

Dr. Sally L. Richter, EdD, RN Assistant Professor,
University of West Georgia
Amanda Hawkins, MSN, RN Associate Professor,
Columbus State University

Objectives
- Identify the relationship between online teaching efficacy and technology competence
- Identify the role of QM in developing online teaching efficacy

How many of you teach online?
Significance of the Study

- Limited literature/evidence related to online teaching efficacy and competency in the use of educational technology

Purpose of Study

- Investigate educational technology competence and online teaching efficacy
- Explore the relationship between educational technology competence and online teaching efficacy
- Describe the role of QM related to teaching efficacy
**Research Questions**

- What is the self-assessed competency of nurse educators in the use of educational technologies?
- What are nurse educators’ sense of efficacy for online teaching?
- What is the relationship between self-assessed competency in the use of educational technologies and nurse educators’ online teaching efficacy?
- What is the impact of demographic variables on educators’ online teaching efficacy?
- What is the best predictor of online teaching efficacy?

**Research Plan**

- **Descriptive Correlational Design**
- Explore variables:
  - Perceived technology competence
  - Perceived online teaching efficacy
  - Identify the relationships among the variables
- **Sample and Setting**
  - Nursing educators teaching at least 51% or more instructional content electronically
  - In Baccalaureate or Graduate Level Programs in one Southeastern State of the U.S.
  - State University System Schools and two private Colleges

**Instruments**

- **Sense of Efficacy for Online Teaching Scale**
  - Factor Analysis
  - Overall reliability coefficient of 0.910
  - (Robinia, 2008)
- **Self-Assessment of Educational Technology Competence Scale**
  - Content Validity Index (0.89)
  - Overall reliability coefficient of (0.95)
  - (Valiga, 2012)
### Sense of Efficacy for Online Teaching Scale

<table>
<thead>
<tr>
<th>Efficacy Domain</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student engagement</td>
<td>46.70</td>
<td>7.51</td>
<td>31-60</td>
<td>0.86</td>
</tr>
<tr>
<td>Instructional strategies</td>
<td>58.20</td>
<td>7.59</td>
<td>38-72</td>
<td>0.89</td>
</tr>
<tr>
<td>Classroom management</td>
<td>58.60</td>
<td>6.99</td>
<td>38-72</td>
<td>0.84</td>
</tr>
<tr>
<td>Use of Computers</td>
<td>59.65</td>
<td>8.34</td>
<td>32-72</td>
<td>0.83</td>
</tr>
<tr>
<td>MNESEOT Score</td>
<td>231.00</td>
<td>27.70</td>
<td>33-297</td>
<td>0.91</td>
</tr>
</tbody>
</table>

### Self-Assessment of Educational Technology Competence Scale

<table>
<thead>
<tr>
<th>Domain</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of competency</td>
<td>35.60</td>
<td>5.69</td>
<td>17-52</td>
<td>0.92</td>
</tr>
<tr>
<td>Help students achieve</td>
<td>46.77</td>
<td>4.58</td>
<td>17-52</td>
<td>0.90</td>
</tr>
<tr>
<td>Implement principles of good teaching</td>
<td>26.05</td>
<td>2.35</td>
<td>17-52</td>
<td>0.90</td>
</tr>
<tr>
<td>Create Learning Experiences</td>
<td>37.20</td>
<td>7.89</td>
<td>17-52</td>
<td>0.90</td>
</tr>
<tr>
<td>DUSAETCS Score</td>
<td>145.40</td>
<td>16.99</td>
<td>100-174</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Content validity index: 0.88

Note: DUSAETCS Score = total score from the Duke University School of Nursing Educational Technology Competency Scale.
Q1. What is the self-assessed competency of nurse educators in the use of educational technologies?

Participants indicated that they were "somewhat competent" to "very competent" in the use of educational technologies based upon subscales:

- Area of competency (85.63%), M=35.60, SD=5.69
- Help students achieve (97.23%), M=46.77, SD=4.58
- Implement principles of good teaching (98.87%), M=26.05, SD=2.35
- Create Learning Experiences (65.30%), M=37.20, SD=7.49

(Total Item M=145.40, SD=16.99, Minimum 100 - Maximum 174)
Likert Scale 1=not at all competent to 4=very competent

Q2. What are nurse educators' sense of efficacy for online teaching?

Participants indicated their sense of efficacy for online teaching was "quite a bit" to "a great deal" for the subscales:

- Student engagement (64.5%), M=46.70, SD=7.58
- Instructional strategies (79.3%), M=58.20, SD=7.58
- Classroom management (78%), M=58.60, SD=6.99
- Uses of computers (78.25%), M=59.65, SD=8.34

(Total Item M=231, SD=27.7, Minimum 33 – Maximum 297)
Likert scale 1 "nothing" to 9 "a great deal"

Q3. What is the relationship between self-assessed competency in the use of educational technologies and nurse educators' online teaching efficacy?

- Pearson correlation coefficient (r = .56, p < .001)
- Shared variance is 31%
Q4. What is the impact of demographic variables on educators’ online teaching efficacy?

- Years of Teaching Experience
  \( t(54) = -1.25, p = .22 \)
- Comparison by Age
  \( F(2,52) = 1.72, p = .19 \)
- Tenure vs Non tenure
  \( t(54) = -.59, p = .56 \)
- Master’s and Doctoral degree
  \( t(54) = -.23, p = .82 \)

Q5. What is the best predictor of online teaching efficacy

OLS Regression used to evaluate best predictor
- Online Teaching Experience
- Professional Development
- Perceived Support from Faculty Colleagues
- Received Instructional Design Support
- Competency in use of Educational Technology

\[ F \text{-test is significant (} F = 4.77; p = 0.002 \) indicating good model fit \]
\[ R^2 = 0.37 \]

Competency is positively related to online teaching efficacy \( (b = 0.112; p < 0.001) \)
Slide 19

**Conclusion**

- For every 1 point increase in competency, online teaching efficacy increased by 0.112, controlling for
  - Years of experience
  - Taken preparatory courses
  - Instructional designer and peer support

Slide 20

**What might help build competency?**

- Training and Instruction
- Support for the use of technology
- Peer Review and feedback
- Standards
- Promote online teaching efficacy through the use of preparatory courses, peer and mentor support

Slide 21

**Rubrics and Standards**

- Institutions of Higher Ed have instituted standards and peer review processes for assessing and assuring quality of their online courses (Little, 2009).
- Quality Matters (QM) is a program that offers quality assurance through a rubric and a process for peer review (Pollacia and McAllister, 2009).
Quality and Competence

- As a living set of tools and processes, QM provides some common language and standards for online faculty to gain competence and to establish a level of quality in their own online courses (Shattuck, 2010).
- The use of QM standards, coupled with the peer review process, provides an effective method of ensuring delivery of quality online courses (Little, 2009).

References