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Evaluation of Quality Matters Certified Courses Using the Null Hypothesis

Jami Nininger, MSN, RN ~ Dale Hilty, PhD



Literature Review

Why Quality Matters?

The literature validates that continuous quality improvement (CQI) processes and quality assurance processes pursue and promote targeted outcomes. Quality assurance and CQI processes facilitate the achievement of outcomes through the creation and refinement of relevant procedures and structures informed by the assessment and analysis of outcome measures associated with the desired outcomes (Brown & Marshall, 2008; Holder, 2007; Shattuck et al., 2014). Quality Matters is a internationally recognized organization whose vision is to lead the promotion and improvement of quality online education and student learning through quality assurance and quality improvement processes (MarylandOnline, 2017). The Quality Matters Higher Education Rubric outlines evidence-based course design standards that when coupled with the intended continuous quality improvement (CQI) process, guide faculty in course design that promotes effective delivery (MarylandOnline, 2018). Research literature and best practices inform the QM rubric design standards and CQI processes (MarylandOnline, 2018; Shattuck et al., 2014; Sun & de la Rosa, 2015).

Course design and implementation are elements of the online learning environment known to promote student success and satisfaction (Kuo et al., 2013; Sun & de la Rosa, 2015). Course design guided by the QM Higher Education Rubric addresses courses structures that facilitate clarity in conveying expectations to learners, create ease in course navigation and establish course structures that align to facilitate learner achievement of identified course outcomes (MarylandOnline, 2018). Therefore, the implementation of evidence-based online course development and design and supporting continuous quality improvement processes are aimed at promoting student satisfaction and success (Kuo et al., 2013; Shattuck et al., 2014; Sun & de la Rosa, 2015).

Outcome Measures of Quality

The identification of quality indicators for distance education is necessary for stakeholders to make sound decisions and ensure continuous program quality improvement processes aim toward the achievement of desired student outcomes (Matsudaira, 2016). Quality performance indicators are elements of the interpretations and perceptions of the major stakeholder groups such as students and public entities (Cleary, 2001). In today's competitive market, it is essential that outcome measures include those that are learner-centered therefore, represent student measures of success. Student satisfaction and achievement represent key performance indicators representative of the stakeholder perspective (Cleary, 2001). Although there is much debate about learner satisfaction as a quality measure in higher education and online learning, student satisfaction is recognized as an indicator of learning effectiveness and is a variable known to influence learner success (Allen & Seaman, 2008; Ke & Xie, 2009; Yukselturk & Yildirim, 2008).

Student satisfaction. Student satisfaction has been validated as a variable in determining the failure or success of online learners (Lee & Choi, 2010; Levy, 2007; Street, 2010). Variables known to influence student satisfaction include teaching methodologies including faculty response times and quality of feedback (Crews, Wilkinson, & Neill, 2015; Barbera, 2004; Garrison & Cleveland-Innes, 2010), course design (Al-Asfour & Lakota, 2012; Shattuck et al., 2014) and learner perceptions of engagement and interaction (Garrison & Cleveland-Innes, 2010; Kuo et al., 2013). In higher education, learner satisfaction is considered one of the major elements for determining the quality of online courses and programs (Moore, 2005; Yukselturk & Yildirim, 2008).

Literature Review (Cont'd)

Grade point average and course grades.

Learner course grades are identified measures of student success (Harrell & Bower, 2011; Kauffman, 2015). Course grades and overall GPA are used in higher education as a measure of student outcomes, and achievement given students are awarded a numeric grade by faculty based on their performance in association with assignment criteria, their performance on testing or other forms of evaluation presumed to be representative of course objectives or outcomes (Matsudaira, 2016). Despite the variety of influences that can impact student grades and GPA, many studies include grades or GPA as an indicator of student achievement. End-of-course grades and GPA are, therefore, acknowledged as accepted measures of students' accomplishment of desired learning and have demonstrated influence on student progression (Harrell & Bower, 2011; Kauffman, 2015; Sun & de la Rosa, 2015). Given the empirical support of student satisfaction and GPAs as acceptable quality indicators for higher education and online education, overall course grade and student satisfaction ratings are used as outcome measures for this project.

Faculty Influences

Faculty professional development and training in evidenced-based course design and online pedagogical practices are essential to the assurance of quality in online education (Hart, 2012; Kuo et al., 2013; Ralston-Berg, 2014, Shattuck et al., 2014). The faculty holds responsibility for utilizing leading practices in online course design and instruction to promote student satisfaction, learning effectiveness and learning achievement (Kuo et al., 2013; Shattuck et al., 2014; Sun & de la Rosa, 2015). Professional development activities targeting the use of evidence-based design standards and implementation strategies are necessary to promote faculty contribution to quality assurance processes (Little, 2009). However, despite this premise, Palloff and Pratt (2011) contend that faculty training for online instruction has not kept stride with the call for excellence in the online classroom. The promotion of excellence in the online classroom extends beyond course design alone. Quality distance education also requires a change in pedagogical practices guided by the use of student assessment data (Garrison & Cleveland-Innes, 2010; Shattuck, Dubins, & Zilberman, 2011). The faculty role in utilizing outcome data to inform the refinement of courses employing evidence-based design structures and instructional methodologies then underpins quality online experiences that promote learning satisfaction and success (Beudoin, 2005; Cole et al., 2014; Garrison & Cleveland-Innes, 2010; Shattuck et al., 2011).

Methods & Results

The statistical analysis is based on the RN-to-BSN online course evaluations which consist of 33 questions. Quantitative Likert 5-point ratings (i.e., strongly agree to strongly disagree) are available for questions 1-8, 10-21, 25-33. The data analysis will include three scales: (1) Sentiment (questions 8, 21), (2) Subscale (questions 1-5, 7, 25, 26, 31, 32), and (3) Full Scale (questions 1-8, 10-21, 25-33). Null Hypothesis 1: There will be no difference among the QM Certified courses for the Sentiment Scale, Subscale, and Full Scale. Null Hypothesis 2: The alpha coefficient reliability estimates will be less than .80 for each scale. The Null Hypothesis 3: The exploratory principal axis factor analysis (EPAFA) will find a one-dimensional common factor solution for the Full Scale questions.

Hypothesis 1: Using SPSS 25, the one-way ANOVA found no significant differences ($p > .05$) among the QM Certified courses on all three scales. Hypothesis 2: the null hypothesis is rejected since the alpha reliability estimates were greater than .80 (Sentiment, .892; Subscale, .972; Full Scale, .988). Hypothesis 3: The EPAFA with a direct oblimin rotation found one common factor accounting for 79.9% of the variance (eigenvalue 23.2). Fail to reject the null hypothesis for the first and third hypotheses.

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