Effect of Quality Matters™ Training on Faculty's Online Self-efficacy

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Abstract

This quantitative, action research study uses Bandura's (1997) theoretical framework of self-efficacy to examine faculty perceptions of their ability to design, develop, and deliver online courses at a large metropolitan southeastern university. The objective of this study was to determine if there is linkage between faculty training and faculty perceptions of their ability to be successful online teachers. A sample of 17 faculty members in a college of education completed a pre-test and post-test questionnaire to measure self-efficacy of online learning after a face-to-face training workshop using the Quality Matters™ (QM) framework (MarylandOnline, 2006). There was a statistically significant increase in faculty perceptions of their ability to design, develop, and deliver online courses.

Introduction

Not all college faculty members have fully embraced online learning. This delay may be attributed to a variety of reasons including a lack of understanding or confidence with the technology (Allen & Seaman, 2008). Moreover, faculty may not know how to develop instruction for this new medium, or understand what makes a good learning experience. Online learning presents many new challenges and opportunities. Wolcott (2003) describes this predicament:

> The use of technologies alone has implications for pedagogy as well as for [faculty] workload. The Web, with its graphical and asynchronous features, for example, changes both the form of presentation and the dynamics of instructional communication with and among the students. (p. 550)

A significant factor for embracing new technologies is the faculty's perceptions and attitudes towards distance learning. Bandura (1997) points out the importance of confidence, effort, skills, and persistence determining the success of an activity. Wang, MacArthur, and Crosby (2003) conclude, "In spite of the opportunities that the World Wide Web provides for educators, a large number of college professors do not take advantage of them. It seems that they have not yet been converted to the ideals of the instructional strategy" (p. 28). The rationale is to increase online learning self-efficacy for faculty through the introduction of a practical structure to organize distance learning.

The purpose of this study was to examine the effect of Quality Matters™ training on faculty perceptions of their ability to design, develop, and deliver online courses. For faculty to be successful distance educators, they must *believe* they can be successful in the medium. This study used the conceptual and theoretical framework of social cognitive theory and self-efficacy (Bandura, 1997). A fundamental construct of social cognitive theory is the relationship between people, behaviors, and the environment (Ormrod, 2007). People will engage in behaviors where they perceive they will be successful. Schunk (1994) found students "sustain[ed] learning efforts" based on self-efficacy, or the belief in one's ability to perform a task. In addition, self-efficacy increases motivation and attribution while self-efficacy is vital to adopt change (Bandura, 1997). With this conceptual framework, it is important for faculty to expand technology self-efficacy and their ability to design, develop, and deliver online courses.

The following research questions were addressed. How does training with the Quality Matters™ framework effect faculty perceptions of their ability to design, develop, and deliver online courses? What is the relationship between faculty perceptions of their ability to design, develop, and deliver online courses and demographic variables like age, gender, ethnicity, and faculty rank?

Methodology

Participants for the study included a sample of 17 faculty members from a large metropolitan university in the southeastern United States. All 17 participants completed the pre-test, and only 14 subjects completed the pre-test and the post-test surveys. The sample included eight males (46%) and nine females (53%). Participants were predominately white ($n = 4$, 82%), with one black participant (6%), one Asian participant (6%), and one American Indian (6%). Participants reported a variety of professional rank and years of service.

The participants volunteered and attended a face-to-face training workshop which was offered on three different days. Before the training, the participants were surveyed with a pre-test questionnaire to obtain demographic information, professional experience, computer competencies, and perceptions of online teaching. After the training the participants were asked to complete a post-test questionnaire. The objective of the training was to introduce the Quality Matters™ rubric, examine the parts of the rubric, and present good and bad examples of online course components. The pre-test and post-test instruments were collected in Survey Monkey, and to ensure anonymity the electronic forms did not capture the internet protocol (IP) addresses of the participants.

The research instrument was developed based on the work of Kinuthia (2003) and Miltiadou and Yu (2000) and used a five-point Likert scale. Kinuthia developed an instrument to examine faculty participation in web-based instruction. Secondly, Miltiadou and Yu designed a valid instrument, the Online Technologies Self-Efficacy Scale (OTSES), to study self-efficacy in online learning. The section of the instrument that focuses on the perceptions of online learning was based on the OTSES. The data collection questionnaire was broken down into three parts: demographics, computer competencies, and perceptions of online learning. The third section, perceptions of online learning, was given twice on the pre and post test.

Results

For the computer competency section of the questionnaire an index score was developed for each participant. This was calculated by reversing the scores of the negatively worded questions, and totaling all of the computer competency questions. Moreover, this process was completed for the perception of online learning with the pre-test and post-test scores, while a paired sample t test was used for analysis.

Table 1 presents the means and standard deviation for the three index scores for the computer competency section and the pre and post section of the instruments. Correlation analysis of the pre and post score indexes showed a high Pearson correlation value of .901 ($n = 14$).

Table 1

Means and Standard Deviations

Variable	N	M	SD
Computer Competence Rating	17	67.41	10.83
Pre-test Attitude Rating	14	51.71	11.75
Post-test Attitude Rating	14	62.57	7.04

Reliability scale was tested on computer competency section and the pre and post section of the instruments. Cronbach's alphas for the sections were in acceptable range. For the questions dealing with computer competency the alpha value was .87 ($n = 17$). The pre-test perception of online learning had an alpha value of .91 ($n = 16$) and the post-test value was .81 ($n = 16$).

A paired-sample t test was calculated to compare the mean pre-test index of perception of online learning with the mean post-test index of perception of online learning. The mean on the pre-test was 51.71 ($sd = 11.76$) and the mean

on the post-test was 62.57 (*sd* = 7.04). A significant increase from pre-test to post-test was found (*t*(13) = 6.526, p < .001). Table 2 presents the results of the paired sample test.

Table 2

Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Upper	Lower			
Pre-test Attitude – Post-test Attitude	10.857	6.225	1.664	14.451	7.263	6.526	13	.000

To address the second research question, is there a relationship between faculty perceptions and demographic variables like age, gender, ethnicity, and faculty rank a factorial analysis of variance (ANOVA) was performed. A Bonferroini-adjusted *p*-value of .05 was used to measure age, gender, ethnicity, faculty rank. There was no significant difference found regarding age, gender, ethnicity, or faculty rank in regards to perceptions of ability to teach online.

Conclusion

Changing attitudes is an important first step to creating change. This study showed a statistically significant increase in faculty perceptions of their ability to design, develop, and deliver online courses. This is a positive outcome and affirms the first research question; however, 47% (*n* = 8) of participants reported to have "Intermediate Computer Skills," while 41% (*n* = 7) reported to have "Experienced Computer Skills." The sample was self-selected and possessed a high level of computer skills, and perhaps these faculty members are the early adopters of technology (Rogers, 2003).

Although there was a significant change in attitudes, there was no significance relating to differences in race, gender, age or faculty rank. Because the sample was self-selected and already has solid computer skills may explain the little significance. Nonetheless, this shows the value of training faculty regardless of rank or status. All faculty members that will be involved in online instruction need further training with examples of best practices.

Changing attitudes is only half the problem. There must be concrete development and deployment of new online classes. Moreover, the college must sustain this momentum with additional training, resources, and support. Without the right support this change in attitude will wither on the vine. Additionally, providing good mentors for faculty is important. Observing success from other faculty members should increase confidence. It is important to identify and celebrate successes to encourage the slow adopters.

The primary limitation of this study is the small sample size. This study shows the potential of changing faculty perceptions of developing and delivering online instruction. However, it is important to continue and expand this type of training for faculty. The QM™ framework fits very naturally with the quality pedagogy already employed in the college. Therefore, the transference of designing curriculum for traditional courses to the online environment should be very easy for faculty.

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