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Faculty Training and Student Perceptions: Does Quality Matter?

Cover Page Footnote

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Faculty Training and Student Perceptions: Does Quality Matter?

By Jun Sun and Ramiro de la Rosa, University of Texas – Pan American

ABSTRACT

The authors of this study explore the relationship between faculty training using Quality Matters™ A standards and the online course quality as perceived by students. The independent variable is whether a faculty member has participated in Quality Matters training before teaching the online course surveyed. The dependent variables are student perceptions of online course quality from different aspects of the Quality Matters standards including learning objectives, outcome assessment, instructional materials, learner interaction, and course technology. A total of $n = 122$ undergraduate and graduate students were surveyed in the study. Subjects in the treatment group participated in the online courses taught by faculty members who had attended Quality Matters training, and those in the control group participated in the online courses taught by faculty members who had not attended Quality Matters training. Results from student t -tests suggest that faculty training significantly enhances learner interaction. The effects of faculty training on learning objectives, outcome assessments, and instructional materials are marginally significant. Yet, faculty training does not seem to have much influence on the use of course technology.

Keywords: Quality Matters Standards, faculty training, student perceptions, online course development, quality assessment

Introduction

Enabled by the advances in information technologies, online learning represents a major, and advantageous, direction for higher education. Compared to traditional in-classroom courses, online courses provide students with more flexible and economic options (Twigg, 2003). Yet the quality of online courses is difficult to control, thus contributing to lower student completion rates over face-to-face courses (Kearsley, 2000; Xu & Jaggars, 2011).

Since the early stages of online education, researchers have recognized the importance of faculty training and development to reduce potential resistance to online teaching methods and to also sharpen their design skills when teaching online courses

^A "Standards and point values of the Fifth Edition of the QM Rubric can be found at <https://www.qualitymatters.org/rubric>. The wording and placement of a few standards has been changed from the 2011-2013 standards used in this study." [for example 6.3.]

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(Berge, 1998; Palloff & Pratt, 2001). Nevertheless, empirical findings consistently point to the lack of training as one of the major barriers to the quality improvement of online education (Conrad, 2004; Allen & Seaman, 2010).

Meanwhile, educational institutions provide various online teaching training programs to prepare their faculty members for the challenges of online teaching (Goodyear, Salmon, Spector, Steeples & Tickner, 2001). Yet, the effectiveness of faculty training programs has been a concern of online education researchers as well as the faculty members themselves (Kosak, Manning, Dobson, Rogerson, Cotnam, Colaric & McFadden, 2004; McQuiggan, 2007). Unless the concern is not sufficiently addressed, instructors are unlikely to actively participate in training, and in turn, schools may be hesitant to set aside resources for such program offering.

Online education should be learner-centered, therefore, students are well-positioned to evaluate online course quality. The purpose of this study is to investigate the causal relationship between faculty training using Quality Matters standards and online course quality as perceived by students. Based on the literature review, this study first identified independent and dependent variables and hypothesized relationships between them. To further test the research hypotheses, observational survey data were also collected. Based on the statistical results from descriptive and reliability analyses as well as student's *t*-tests, the implications of the findings are discussed.

Research Background

Under the initiative to set up a national benchmark for online course design, educators established the Quality Matters (QM) program to assist continuous improvement of online education (Moore & Kearsley, 2012). The program is a faculty-driven peer review process to facilitate the evaluation of online courses with comprehensive rubrics (Legon, 2006). The ultimate purpose is to enhance student learning through the quality assurance of online courses.

The QM rubrics contain 41 specific review standards to ensure that the following key components of online course designs align with each other: 1) learning objectives, 2) assessment and measurement, 3) instructional materials, 4) learner interaction and engagement, and 5) course technology (Quality Matters, 2013).^B The rubrics offer instructors a template to review and improve online course designs, and assure educational institutions of online course quality with sufficient confidence (Parscal & Riemer, 2010).

^B “The materials found on the Quality Matters website may not be used without the express written consent of MarylandOnline. Terms of Use. © 2014. MarylandOnline. All rights reserved.

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The Quality Matters review process of online courses requires additional faculty development and training (Shattuck, 2010). Such training programs not only familiarize online instructors with a comprehensive set of standards, but also lead to smooth transitions from in-class lecturing to online teaching in terms of general philosophy as well as specific methods. However, few studies have investigated the effects of faculty Quality Matters training on student online learning experiences. In particular, it is not clear whether the participation in Quality Matters training helps instructors to improve online course quality. The ultimate criteria for the evaluation of online course quality should be based on direct feedback from students. As the “consumers” of online education, students are what matters in the end. Thus, it is necessary to assess the effectiveness of Quality Matters training from the student perspective.

At the institutional level, researchers have discussed and examined the role of faculty training and support in online education. For instance, Covington, Petherbridge and Warren (2005) proposed a triangulated approach to assist faculty’s transition from face-to-face lecturing to online teaching with a) administrative support, b) professional development and c) peer support. Administrative support and professional development are closely related to faculty training. For Quality Matters training in particular, an institution’s administration is encouraged to adopt the standards, and provide some incentives for faculty members to attend the training programs.

At the individual level, researchers have been largely focused on the effectiveness of training programs from faculty perspectives. Based upon the responses from faculty participants who attended an online pedagogical training program, Gold (2001) found that such programs may significantly change teachers’ perceptions of online instruction, as they are potentially more participatory and interactive than face-to-face instruction. The results of some case studies suggest that faculty development programs eases instructors’ transitions from face-to-face lecturing to online teaching (Kim & Bonk, 2006). Based upon survey results from one-thousand faculty members, Shea, Pickett and Li (2005) found that faculty development programs on online course development directly affect faculty satisfaction and acceptance of online education.

Notwithstanding, few studies have examined the direct impact of faculty training programs on different aspects of online course quality as perceived by students. Based on the review of empirical studies on faculty development using different methods (quantitative and qualitative), McQuiggan (2007) identified nine topics related to online teaching training effectiveness, but none of them consider the student perspective. Nevertheless, Wiesenmayer, Kupczynski & Ice, (2008) found correlations between faculty support and student satisfaction in online programs. Meanwhile, new e-learning technologies have the potential to change the nature of pedagogy to meet the needs of students in a knowledge

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society (Garrison, 2011). Therefore, it is important to examine the impact that online teaching training programs have on online course quality from the student perspective.

There are different approaches to assess outcomes of online course delivery, and a comprehensive evaluation should address its multiple aspects (Fenwick, 2001). For instance, final course grade is most commonly used to evaluate how well each student has learned from a course, but final course grades alone are not enough to measure teaching effectiveness (Barr & Tagg, 1995). A student is likely to receive a better grade from a well-designed course than from a poorly-designed course. However, the final grade also depends on many other factors, such as how motivated, prepared, and diligent a student is. Thus, researchers found only a marginal relationship between student final grades and course evaluation (Johnson, 2002; Gigliotti, & Buchtel, 1990).

In addition to the final grades they receive,, students also base their evaluations of a course on its design and implementation (Remedios & Lieberman, 2008). Among different measures, researchers find that student course evaluations tend to be generally reliable and valid (Centra, 1993; Hobson & Talbot, 2001). The perceived course quality of students is not often strongly correlated with the grades that they receive, which depends on many non-course-related factors (Johnson, 2002; Gigliotti, & Buchtel, 1990). Actually, student perceptions of course organization and delivery are more reliable than rapport with students and fair grading (Jirovec, Ramanathan & Rosegrant-Alvarez, 1998; Chen, & Hoshower, 2003). Thus, student feedback provides a viable way to evaluate the quality of online courses (Driscoll, Jicha, Hunt, Tichavsky & Thompson, 2002).

Research Hypotheses

The independent variable of this study is whether or not a faculty member has participated in Quality Matters training before teaching the online course surveyed. The dependent variables are student perceptions of online course quality from different aspects of Quality Matter Standards. The effects of faculty training on online quality can be assessed by comparing student perceptions between the different levels of the independent variable. The main premise is that if faculty training improves online course design, students will positively affect course delivery.

There are five primary aspects of Quality Matters standards, and correspondingly there are five dependent variables. These dependent variables include: learning objectives, outcome assessments, instructional materials, learner interactions, and course technologies. Quality Matters training provides faculty members with specific guidelines on how to enhance each aspect in the design of online courses. Altogether, five research hypotheses are

proposed, one for each dependent variable in terms of its relationship with the independent variable of faculty training.

Firstly, Quality Matters training emphasizes the importance of clear and well-defined learning objectives in online courses. In traditional face-to-face courses, an instructor has opportunities to explain learning objectives to students in person, especially when students ask questions about them. But in online courses, ambiguous learning objectives lead to student confusion throughout the course. The training provides faculty members various templates to write clear learning objectives, and facilitate deeper thinking on course organization and learning activities. Hence, the first research hypothesis is as follows:

H1: Faculty training has a positive effect on students' perceptions of learning objectives.

In addition to learning objectives, instructors of online courses need to provide detailed grading policies for each type of assignment. Quality Matters training provides faculty members with guidelines on how to implement grading rubrics for discussions, assignments and projects. Instructors are also encouraged to make these rubrics readily available to students. When students are informed of grading policies beforehand, they are aware of the requirements for each assignment. This leads to the second hypothesis:

H2: Faculty training has a positive effect on students' perceptions of outcome assessments.

Instructional materials comprise the main content of an online course. In addition to traditional material such as PowerPoint slides, Quality Matters training encourages instructors to use other digital instructional materials such as videos and simulations. The clarification of learning objectives and assessment methods is also helpful for an instructor to prepare instructional materials that are appropriately aligned. Thus, the next hypothesis is as follows:

H3: Faculty training has a positive effect on students' perceptions of instructional materials.

One major challenge in online education is the lack of face-to-face interactions between instructors and students as well as among the students themselves. Quality Matters training emphasizes the importance of student participation, and introduces different ways to enhance instructor-student and student-student interactions. In particular, faculty members are encouraged to use active learning methods, such as hands-on exercises and group projects in online courses.

H4: Faculty training has a positive effect on students' perceptions of learner interactions.

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Faculty members deliver online courses through the use of learning management systems (LMS) such as BlackBoard and WebCT. Advances in information and communication information technologies (ICT) have lead to the emergence of various e-learning tools such as discussion boards and web conferencing tools. Quality Matters training includes how to use different e-learning tools for different purposes. The use of such tools may enhance outcome assessments, instructional materials and learner interactions. Therefore, the last hypothesis:

H5: Faculty training has a positive effect on students' perceptions of course technologies.

Methodology

Observational survey data were collected from students to discover whether faculty participation in Quality Matters training programs positively affect online course quality. If the findings provide a positive answer to the research question, there is supporting evidence to the claim that the participation in the Quality Matters program leads to the improvement of online education quality as perceived by the student.

Research Design

This study adopts a quasi-experiment design, as a complete random design is not possible in this study (i.e., a student cannot be forced to select or not select a course). In the control group, students take online courses taught by faculty members who have not participated in QM training. In the treatment group, students take online courses taught by faculty members who have participated in QM training. Though subjects were not randomly assigned to two groups, they did not know whether an instructor had participated in the QM training or not throughout the process. Thus, faculty training status does not have any influence on student course selection, and the subjects in two groups are not supposed to be systematically different from each other. The differences in the dependent variables detected should be mostly due to the treatment.

Faculty members who have participated in a Quality Matters training program are likely to design online courses following the requirement of standards. Students who take such online courses are supposed to give more positive evaluations than otherwise. It is possible that a faculty member does not incorporate Quality Matters standards—even following a QM training. Yet, such a compliance issue still reflects the effectiveness of training programs. That is, if a program is effective, most of the attendees are likely to follow the guidelines received in the training.

Measurement

The measures of dependent variables were adapted from Aman's (2009) Student Satisfaction Instrument. For each component of the Quality Matters standards—a learning objectives, b) outcome assessments, c) instructional materials, d) learner interactions, and e) course technologies, there are associated student perception-related items in terms of approval level with a particular online course (see Appendix 1). A five-item Likert scale was used to measure student perception: strongly disagree, disagree, neutral, agree, and strongly agree.

Additionally, there are student demographic items, including gender and age. Further, the questionnaire asks students about their experiences with online education. One question asks for the number of online courses taken previously, and the other asks for the number of online courses taken during the current semester. On average, the questionnaire takes participants approximately 5-10 minutes to complete.

Data Collection

During the second half of an online course, an email invitation containing a link to the online questionnaire was sent to 195 undergraduate and graduate students enrolled in online courses at a Southwest university. After about one week, a follow-up reminder to complete the questionnaire was sent to those who had not yet responded. Altogether there were 127 responses, however five of them were largely incomplete. Thus, the overall response rate was 65.13%, and the valid response rate was 62.56%. To identify possible non-response bias, the early responses (those received before reminder) and late responses (those received after reminder) were compared. There were no significant differences between two sets of responses, thus suggesting that the non-response bias was not a big concern.

Participants

Participants in the treatment group took the online courses taught by faculty members who had already attended Quality Matters training, and those in the control group took the online courses taught by faculty members who had not participated in a Quality Matters training. Among the 122 participants who provided valid responses in the final sample data, 72 participants comprised the treatment group and 50 participants made up the control group. The sample sizes were not exactly the same but still relatively balanced between the two groups with a 3:2 ratio. The gender distribution was even: 61 participants were females and 61 were males. On average, participants were around 30.47 years old. The responses to

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two additional questions in terms of e-learning experiences indicated that most participants had previously taken five to six online courses, and were taking one or two online courses at the time of the questionnaire’s administration..

Data Analysis Procedures

An independent sample student’s *t*-test was the statistical technique used to test each of the research hypotheses. All of the research hypotheses are directional--that is, the independent variable has a positive effect on each of the dependent variables. Therefore, the hypothesis testing is one-tailed rather than two-tailed by default. First, a reliability analysis was conducted to assess the internal consistency of item responses for each dependent variable. If response reliability is acceptable, the index score of each variable will be calculated for subsequent *t*-tests. Also, descriptive statistics including means and standard deviations from descriptive analyses were reported.

RESULTS

Presented in Table 1 are the results of reliability and descriptive analyses. Chronbach’s Alpha was the reliability coefficient used in this study to measure the internal consistency of responses to the items measuring the same variable. If an alpha was greater than 0.7, this indicated that the measurement error of the items was controlled. In this study, the measures of all dependent variables exhibited acceptable levels of reliability as they were around 0.8 or higher. The relatively high reliability of item responses supported the calculation of index scores for each dependent variable based on the average of item scores.

Table 1 *Reliability and Descriptive Analyses*

Dependent Variable	Alpha	Treatment Group	Control Group
Learning Objectives	0.87	4.49 (0.54)	4.31 (0.84)
Outcome Assessments	0.85	4.52 (0.64)	4.32 (0.88)
Instructional Materials	0.92	4.31 (0.76)	4.10 (1.02)
Learner Interactions	0.79	4.34 (0.73)	3.99 (1.03)
Course Technologies	0.87	4.25 (0.84)	4.15 (0.88)

The descriptive statistics show that all average responses were above the neutral point of three, and the standard deviation was around one or lower. Thus, participants generally had positive perceptions of online courses. As expected, the treatment group exhibited higher average responses on all of the dependent variables over the control group. On the other hand, the standard deviations of the responses in the treatment group were lower than those in the control group. These findings suggest that the faculty training lead to relatively more positive and consistent perceptions from students with regard to online

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course quality. Table 2 shows the results of *t*-tests to examine statistical significance. The null hypothesis of each research hypothesis presents that there was no difference between the treatment group and control group in the average values of the corresponding dependent variables. The significance level of each *t*-test was set to 0.05, with 0.1 as the threshold for marginal significance (Craparo, 2007). The *p*-values of *t* statistics indicated that one difference was significant at the 0.05 level, three differences were marginally significant at the 0.1 level, and one difference was not significant.

Table 2 Hypothesis Testing

Hypothesis	<i>t</i>	<i>p</i> -value
H1: Training → Learning Objectives	1.39	0.08
H2: Training → Outcome Assessments	1.35	0.09
H3: Training → Instructional Materials	1.24	0.10
H4: Training → Learner Interactions	2.10	0.02
H5: Training → Course Technologies	0.61	0.27

Specifically, there was supporting evidence for Hypothesis Four (H4) on the effect of faculty training on learner interaction. Hypotheses One, Two and Three (H1, H2, and H3) were marginally supported, indicating that faculty training had some impact on learning objectives, outcome assessments, and instructional materials. However, faculty training did not improve the use of course technology as perceived by students.

CONCLUSIONS AND IMPLICATIONS

The relationship between faculty training and student perceptions of online course quality was investigated. The author of this study hypothesized that if instructors had participated in Quality Matters training, students who took their online courses would have more positive perceptions in terms of a) learning objectives, b) outcome assessments, c) instructional materials, d) learner interactions and e) course technologies. Observations were collected from a quasi-experiment in which students were divided into a control group and a treatment group depending on faculty training status. The results suggest that faculty training significantly enhances learner interaction. The effects on learning objectives, outcome assessments, and instructional materials are marginally significant. Yet, faculty training does not seem to have much influence on the use of course technology.

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The main limitation of this study was that some factors were not taken into account that could have influenced the dependent variables. For example, faculty members at this particular higher education institution are also required to participate in a BlackBoard training program in order to teach an online course. Yet, it is optional for faculty members who have already obtained the certificate to decide whether or not to participate in training on the BlackBoard platform--which incorporates course technologies such as discussion boards and wikis. Compared with Quality Matters training, Blackboard training may have a stronger effect on the course technology variable. The exclusion of such a more direct cause may explain why the corresponding hypothesis (i.e. H5) was not supported. In future studies, control variables like this may be included to provide deeper insights with more sophisticated statistical analyses (e.g. regression and structural equation modeling).

Nevertheless, the results provide supporting evidence for most of the research hypotheses. Thus suggesting that Quality Matters training does indeed help instructors improve the quality of online courses that they teach. In particular, the training enhances learner interaction in the virtual environment. This is likely related to the fact that Quality Matters training emphasizes the role of facilitators rather than lecturer for online instructors. Online education is often criticized for the lack of interactions compared with face-to-face education. The results of this study suggest that Quality Matters training is effective in addressing this concern.

Additionally, the findings suggest that the Quality Matters training enhances online course design in terms of learning objectives, outcome assessments and instructional materials. Compared with learner interactions, these aspects are more course-specific. That is, they also depend on other factors such as subject area and instructor expertise. This may explain the marginal effects of Quality Matters training on these dependent variables. Although the Quality Matters training program may not be sufficient on its own with regard to those aspects, the program remains very helpful to instructors who teach online courses.

The findings in this study also provide some practical implications at the institutional level. It is worth the effort and resources for administrators to provide faculty members online teaching training programs, especially using Quality Matters standards. Administrators may even consider offering some incentives to faculty members to participate in such training programs. On the other hand, faculty members should seek every opportunity to attend such a training program in order to enhance their online teaching. For those involved in an online program, in particular, it is highly recommended that they participate in training to enhance the consistency and quality of different courses in the program.

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Appendix: Measurement Items

Learning Objectives

The course objectives for this online course were closely related to what I was expected to learn.

I find it helpful to be provided with the learning objectives in the course (e.g. syllabus, module introduction).

The course objectives for this online course assisted with guiding my learning activities.

Outcome Assessments

I find it helpful to be provided with the assessment methods of my course performance (e.g. assignment, discussion, project) from the beginning.

The course assessment methods for this online course were clearly described.

The course assessment methods for this online course were appropriate.

Instructional Materials

I find the course resources and materials helpful.

The purpose of course resources and materials for this online course were clearly described.

The course resources and materials for this online course are rich in content.

Learner Interactions

There are sufficient ways for me to interact with the instructor during this course.

The course instructor for this online course interacted with me in a timely fashion.

The amount of interaction with the instructor for this online course was helpful.

Course Technologies

The technology used in this online course enhanced my learning.

Technology support was readily available for using the online features of this course.

The course technology functioned well most of the time.

About the Authors

DR. JUN SUN is an Associate Professor of Computer Information Systems and Quantitative Methods at the University of Texas - Pan American. One of his research interests is in online teaching technologies. Relevant publications have appeared in *Decision Sciences Journal of Innovative Education*, *International Journal of Service and Standards*, and *Information Systems Educator Journal*.

DR. RAMIRO (RAM) DE LA ROSA is the Assistant Director for the Center for Online Learning, Teaching and Technology at The University of Texas - Pan American. He has 14 years of experience in the field of online education, and has served as Director, Assistant Director, and Instructional Developer/Designer. In addition, he teaches online graduate courses in Research Methods. Dr. de la Rosa holds a Doctor of Philosophy from Our Lady of the Lake University, a Master of Education from Texas Tech University and a Bachelor of Business Administration from Baylor University.

Table 1 *Reliability and Descriptive Analyses*

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H3: Training → Instructional Material	1.24	0.10
H4: Training → Learner Interaction	2.10	0.02
H5: Training → Course Technology	0.61	0.27