Online Course Reviews and the Student Experience: A Case Study

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The purpose of this case study was to explore the impact of online course design reviews on student perceptions of the course and instructor as reported on course evaluations. This study was conducted in an online Doctor of Education (Ed.D.) program at a small private university located in the Mid-Western United States that adopted an initiative to improve the quality of their online courses. It utilized the Quality Matters Higher Education Rubric, Sixth Edition (2018) standards as a framework through which to explore effective online course design and the impact on the student experience. Data was collected through university-administered student course evaluations from two semesters prior to each external online course review and two semesters after each external online course review. Findings indicate students more strongly agreed with all the course and instructor items after the online course reviews. Course and instructor means improved for course evaluation questions specifically related to course design as well as for items not directly related to course design. Qualitative analysis of the open-ended response items further supported these findings.

Keywords: online course design, Quality Matters, graduate education, student course evaluations

According to the National Center for Educational Statistics (NCES), online graduate programs have experienced enrollment growth for at least two decades. Total enrollments increased 36 percent (from 2.2 million to 2.9 million students) between 2000 and 2010 (NCES, 2020a) and 8 percent (from 2.8 million to 3.1 million students) between fall 2009 and 2019 (NCES, 2021). In a survey of Chief Online Officers, over the past two years, enrollment in online graduate programs has increased faster than anticipated, even while online enrollment rates for undergraduates have decreased (Quality Matters & Eduventures Research, 2021). Among graduate students in private nonprofit universities like the one in this study, 29.8% were enrolled in programs that are exclusively online (NCES, 2020b). Eighty-six percent of Chief Online Officers at private universities anticipated that online enrollment would continue to increase (Quality Matters & Eduventures Research, 2021).

The prevalence of technology in modern life and the increasing use of online education call for new models of online instruction (Buch et al., 2018), but researchers have traditionally understood high-quality online instruction in diverse ways (Debattista, 2018). Perhaps this is why quality assurance efforts have not kept pace with the growth of online programs (Hinck et al., 2018). Without a uniform set of standards, it becomes difficult to ascertain the effectiveness of online teaching and learning. One organization that has attempted to create research-based standards for high-quality online instruction is Quality Matters. Quality Matters' mission is to "promote and improve the quality of online education and student learning nationally and internationally" (2020a, para. 7). The Quality Matters Higher Education Rubric, Sixth Edition (2018) consists of eight General Standards (Course Overview and Introduction, Learning Objectives, Assessment and Measurement, Instructional Materials, Learning Activities and Learner Interaction, Course Technology, Learner Support, and Accessibility and Usability). Each

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of the General Standards contains between four and nine Specific Review Standards, with a total of 42 Specific Review Standards. Quality Matters maintains an extensive online repository of research that supports the adoption of each General Standard. The QM reference library includes 3,236 research studies to support the Quality Matters standards.

In light of the plurality of understandings of high-quality online instruction (Debattista, 2018) and that quality assurance efforts have lagged behind the growth in online programs, the faculty in the online Doctor of Education (Ed.D.) program in this study sought to ascertain the impact of their efforts to incorporate research-based best practices in their course design. The purpose of this case study was to explore the impact of online course design reviews on student perceptions of the course and instructor as reported on course evaluations.

Literature Review

Although research has established the use of Quality Matters standards in supporting highquality online course design, researchers are just beginning to understand the impact of the standards on the student experience. Sadaf et al. (2019) studied student perceptions of the impact of Quality Matters certified online courses on learning and engagement and whether student responses to the Quality Matters items aligned with the Quality Matters standards. Participants completed a cross-sectional survey consisting of closed- and opened-ended questions. The researchers designed the 42 survey items using the Specific Review Standards of the Quality Matter Higher Education Rubric, Fifth Edition (2014) to ensure content validity. For the impact on learning and engagement sections, students were given the Specific Review standard and the following statement "Please think about each standard and rate how much impact this standard has on your online learning (engagement)" (Sadaf et al., 2019, p. 219). Students responded to the prompt using a Likert scale with four choices (*no impact, a little impact, some impact, a lot of*

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impact). The two open-ended prompts were "Which strategy(ies) impacted you the most for your learning?" and "Which strategy(ies) impacted you the most for course engagement?" (Sadaf et al., 2019, p. 219).

The findings from Sadaf et al. (2019) demonstrate Quality Matters certified courses' impact on the student experience. Most participants perceived the eight Quality Matters General Review Standards had *a lot of impact* on their learning. Most participants also perceived the eight Quality Matters General Review Standards had *a lot of impact* on their engagement. In addition, open-ended responses indicated that General Standard 5: Course Activities and Learner Interaction impacted learning the most, while an exploratory factor analysis (EFA) revealed Clear Expectations were the highest factor for both learning and engagement.

In their comparison of two Quality Matters redesigned online courses to two non-Quality Matters designed online courses, Lynch and Gaston (2020) sought to answer two research questions: (1) "is there a difference in student learning outcomes among QM-redesigned courses compared to traditionally designed (Non-QM) courses?" (Purpose section, para. 1) and (2) "is there a difference in the quality of student discussion forums in QM-redesigned courses compared to traditionally designed (Non-QM) courses?" (Purpose section, para. 1). In this retrospective study, grades for students enrolled in two QM-redesigned courses and two traditionally designed (Non-QM) courses (n=891) in 2015 were compared using descriptive statistics, an independent t-test, and a second analysis using a one-way ANOVA. On their course satisfaction (evaluation) surveys, participants were asked to respond to the prompt "Overall I learned a lot in this course" (Analysis section, para. 3) using a five-point Likert scale, from 1 indicating strong disagreement up to 5 indicating strong agreement. The researchers found that students in the Quality Matters-redesigned online courses had slightly higher grades, though not statistically significant. Student

responses to the prompt "Overall I learned a lot in this course" were higher for QM-redesigned online courses (M = 4.35, SD = .19) than for traditionally designed (Non-QM) online courses (M = 4.25, SD = .26). The researchers then conducted a one-way, between-group ANOVA and found no significant differences between student course evaluation scores for the four courses.

Watson et al. (2017) surveyed online Master's students in a Mid-Western university to investigate what they perceived their instructors could do to improve their learning. Participants were sent a 13-question survey with four demographic questions and nine open-ended questions about what led to satisfaction and dissatisfaction in their online courses. Six hundred twenty-four students returned the survey. Of the students who answered the demographic questions, 68% were female and 32% were male. Participants were largely below 35 years of age (70%), with 24% between 35 and 50, and 5% (33) were over 50. A content analysis of responses revealed the top ten most common responses were relevant to four of the eight Quality Matters Higher Education Rubric, Fifth Edition (2014) Standards and noted that "students' top online strategy, be available and responsive to students, is endorsed by the fifth Quality Matters standard - Course Activities and Learner Interaction" (p. 425). Participant selection of top strategies was also relevant to Quality Matters General Standards 4, 6, and 7.

By contrast, Kaatz (2021) surveyed faculty at a medium-sized university in the Western United States about their perceptions of their quality assurance training. Quality Assurance training was based on the Quality Matters rubric and the Quality Online Learning and Teaching (QOLT) rubric, with faculty choosing which rubric to use. Training was provided by Quality Matters, QOLT, or the Institution's Online Campus (OC) organization. The researchers asked one open-ended question about whether the training helped with "preparation/design, teaching, and student's learning" (Methods section, para. 1). Qualitative analysis revealed although 96% of

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faculty valued their Quality Matters quality assurance training, some participants reported their course evaluations remained the same or went down. Participants attributed the lower scores to student perceptions that the course was harder or required more work due to the increased structure within the re-designed online course. These findings support other studies that found lower student satisfaction scores (Lee et al., 2018) and the perception that courses were more challenging and the volume of work higher after Quality Matters certification (Crews et al., 2016). One limitation of the study was that findings were not separated according to the three means of training (Quality Matters, QOLT, and OC).

Student perceptions of online course quality vary according to different factors (Hixon et al., 2016a). Experience has an impact on perceptions, with novice and experienced students placing greater value on different specific components of a course. Novice students placed greater emphasis on netiquette guidelines while students with online experience emphasized clear expectations of performance and the alignment of instructional components. Similarly, nontraditional students place a higher value on Quality Matters General Standard 1: Course Overview and Introduction and General Standard 6: Course Technology, which reflects a need for orientation to online learning, course coherence, and learner support (Hixon, et al., 2016b).

In summary, the literature indicates students perceive greater learning in QM-designed courses (Lynch and Gaston, 2020), and the QM standards have an impact on learning (Sadaf et al., 2019). QM standards also support students' top online strategy of instructor availability, as well as other top strategies students value (Watson et al., 2017). Likewise, faculty overwhelmingly valued QM training, though they reported their course evaluations remained the same or went down (Kaatz, 2021). Other studies indicate lower student satisfaction after QM certification (Lee et al., 2018) and the perception that the course has increased in rigor and

workload (Crews et al., 2016), though student perceptions of online course quality are dependent on various factors related to online experience and preference (Hixon et al., 2016a).

Methods

Due to the increasing prevalence of online courses, rapid changes in technology, multiple models of online course quality, and differing findings regarding student perceptions of course quality after Quality Matters course review, there exists a need to further investigate student perceptions of the impact of online course design reviews. Using research-based standards for online course design is one method to investigate the impact on educational practices. This study represents a further exploration of research-based best practices and their impact on the student experience. To guide this study, the following research questions were utilized:

- 1. Do online course design reviews impact student perceptions of the course?
- 2. Do online course design reviews impact student perceptions of the instructor?

To answer the research questions, the researchers utilized a case study to investigate the impact of online course design reviews on student perceptions of the course and instructor as reported on student course evaluations. For the purpose of this study, a case study is defined as "a qualitative design in which the researcher explores in depth a program, event, activity, process, or one or more individuals" (Creswell & Creswell, 2018, p. 247). The setting for this case study was a private not-for-profit residential liberal arts university in the Mid-Western United States. The university was founded in 1882 and offers 86 Bachelor's degrees, 10 Master's degrees, 5 Doctoral degrees, and a variety of non-degree license and certificate programs. Programs are offered in person and online. In fall 2020, 4,829 students matriculated from the institution, about a third of which were graduate students.

This case study was conducted in an online Doctor of Education (Ed.D.) program in which students are predominately working P-12 educators, including teachers, principals, and superintendents. Some students are employed in other fields, including the health professions and business. As virtually all doctoral students are employed full-time, the program utilizes an asynchronous online learning environment. Students have ranged from 22 years to 70 years of age with an average age of approximately 39.7 years. Doctor of Education degree requirements includes 60-course credits composed of core courses (24 credits), research and dissertation courses (21 credits), and electives (15 credits). Students select one of two elective strands: Teaching and Learning or Administration. Students who choose the Administration strand take courses to earn a state superintendent's license.

Program faculty are student-centered and vested in student success. As such, the faculty felt it important to assure a high-quality online experience for students. Therefore, in 2017 the Ed.D. program adopted an initiative to improve the quality of its online courses which included three objectives:

- 1. Train faculty in the application of research-based best practices for online course design.
- Provide internal resources and guidance in the application of research-based best practices for online course design.
- 3. Achieve external certification of Ed.D. program courses in the application of research-based best practices for online course design.

This case study utilized the Quality Matters Higher Education Rubric, Sixth Edition (2018) standards as a framework through which to meet these objectives. Prior to a Quality Matters external course review, each course underwent an internal course review. To qualify for an internal course review, three conditions were met: (1) the Course Representative (instructor) must have successfully completed the Applying the Quality Matters (APPQMR) workshop, (2) the Course Representative must be currently teaching online, and (3) the Course Representative must have taught the course at least twice. The Chair of the Ed.D. program (who was also a Ouality Matters Peer Reviewer) served as the Internal Course Review Manager and determined if the course met the Quality Matters Higher Education Rubric (2018) standards and provided helpful recommendations, as needed. Quality Matters Specific Review Standards are valued at three, two, or one point each for a total of 100 possible points. Points for each Specific Review Standard are awarded in full or not at all. To receive Quality Matters certification, a course must meet all three-point standards (known as Essential Specific Review Standards) and achieve a total of at least 85 points. Typically, it took several iterations of feedback between the Internal Course Reviewer Manager and the Course Representative before both agreed the course internally met the Quality Matters Higher Education Rubric, Sixth Edition (2018) standards, would earn at least 85 points, and was ready for external course review. Upon completion of the internal course review, an official (external) Quality Matters course review was conducted by a three-member team consisting of a Master Reviewer who chairs the review, a Peer Reviewer, and a Subject Matter Expert. Each member of the course review team completed their own course review and then together determined if the Essential Specific Review Standards were met, and the course earned at least 85 points out of 100 possible points.

Faculty invested six hours for APPQMR training and roughly 5-20 hours to update each course to meet standards; a figure that varied widely depending on the experience of the faculty member and the prior level of preparedness of the course for QM review. Likewise, the internal reviewer invested a total of 10-20 hours of review for each of the 13 courses. The Doctor of Education program leadership anticipated one year to complete the last two objectives of the initiative; however, it was over three years before the final objective was successfully completed and all 13 courses were Quality Matters certified. Student participation in the course evaluations

is optional so not every student chose to complete a course evaluation. In total, 50 student participants completed student course evaluations two semesters prior to external course review and 45 student participants completed student course evaluations two semesters after external course review.

Data Collection

For this study, data was collected through university-administered student course evaluations from two semesters prior to each external course review and two semesters after each external course review for courses in the Doctor of Education Program. The university states two purposes for student course evaluations: (1) perceptions of teaching effectiveness by students can assist instructors and academic areas to improve teaching and (2) to gather data and information to inform contract renewal, promotion, and tenure considerations. The student course evaluations are centered on two constructs: (1) the effectiveness of the course and (2) the effectiveness of the instructor. Each construct is measured through six items. For each item, students are asked to respond to a statement using a four-point Likert scale (strongly agree, agree, disagree, and strongly disagree). The six items (statements) for the first course construct (effectiveness of the course) included:

- 1.1 The syllabus clearly communicated what was expected of me as a student.
- 1.2 The course increased my understanding of the content.
- 1.3 Class materials, including the text, were appropriate for this course.
- 1.4 Instructional activities enhanced my learning experience.
- 1.5 The assignments provided opportunities to apply new knowledge and/or skills.
- 1.6 I attained the Goals/Objectives of the course.

The six items (statements) for the second course construct (effectiveness of the instructor) included:

2.1 The instructor was knowledgeable about the content.

2.2 The instructor was well prepared for class.

2.3 The instructor was concerned with whether or not the students learned the material.

2.4 Assistance from the instructor outside of class was available.

2.5 The criteria for grading were clearly communicated.

2.6 I received appropriate and timely feedback on my work.

The student course evaluations also include two optional open-ended response items, one for the strengths of the instructor and the course, and another for suggestions to improve the course. No demographic data on participants is reported on student course evaluations.

Data Analysis

Seven instructors submitted a total of 13 courses for external Quality Matters review. However, participation in the study was voluntary and several faculty members chose not to participate. Data availability also proved to be a challenge. Unfortunately, the university didn't distribute student course evaluations before and after each course in the study. Additionally, the university changed its student course evaluations for one year in the middle of the initiative, making a large portion of data unsuitable for comparison. In the end, five courses taught by three faculty members were eligible for the case study. Two participating instructors taught two courses each and one participating instructor taught one course.

Student course evaluation included numeric equivalents for each response on the Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree). For this case study, numeric data was gathered from all student course evaluations and entered into a spreadsheet. To

ensure confidentiality, instructors were assigned a number (1 - 3) and courses were assigned a letter (A – E). Means and standard deviations were calculated for student course evaluation data for each course and collected in Table 1 (see Tables and Figures). Next, the mean and standard deviations were calculated for student course evaluation items for each of the five courses two semesters prior to external course review and two semesters after external course review. Means for the first construct (the course) are shown in Table 4 and means for the second construct (the instructor) are shown in Table 5 (see Tables and Figures). Comparisons of the item means before and after external course review was made to determine if there were changes in student perceptions. Cronbach's alphas were calculated for both constructs, demonstrating a strong internal consistency for both the course (0.97) and the instructor (0.88).

Responses to the open-ended questions on the student course evaluations were analyzed and coded for themes. Coding "involves taking text data or pictures gathered during data collection, segmenting sentences (or paragraphs) or images into categories and labeling those categories with a term" (Creswell & Creswell, 2018, p. 193). A priori codes were derived from standards of the Quality Matters Higher Education Rubric, Sixth Edition (2018). Responses to open-ended were also compared to responses to the closed-ended questions to determine if openended responses supported and/or illuminated the closed-ended responses.

Results

Student Perceptions of the Course

To answer the first research question (Do online course design reviews impact student perceptions of the course?), the researchers analyzed the first six items of the student course evaluations through descriptive statistics. Three of the five courses saw increases in means for the course construct with two courses having slight decreases, as shown in Table 2 (see Tables and

Figures). Regardless, as shown in Table 4 (see Tables and Figures), the total means for each of the six items increased from pre- to post-Quality Matters course review. In other words, through the student course evaluations, students more strongly agreed with each of the course construct items two semesters after the online course design review than two semesters prior to the online course design review. Students most strongly agreed with two statements, "Class materials, including the text, were appropriate for this course" (M = 1.12), and "The course increased my understanding of the content" (M = 1.12). One item with the highest mean also had the greatest increase in means, "Class materials, including the text, were appropriate for the next greatest increase in means, "The course increased my understanding of the content" (M = 1.30 to M = 1.12) and "Instructional activities enhanced my learning experience" (M = 1.36 to M = 1.18).

From the open-ended responses collected two semesters after the online course design review, there emerged one dominant theme related to student perceptions of the course: the strong design and organization of the course. Course design is implied throughout the Quality Matters Specific Review standards such as standards 2.1 and 2.2 but might be best captured in Specific Review Standard 8.1 "Course navigation facilitates ease of use." Multiple responses spoke to this standard such as "I loved the outline of the... modules, etc. It was really easy to follow and keep track of where things were located", "great activities aligned with the course," "I felt the assignments assisted my understanding of the content without being too lengthy or timeconsuming", "the module presentations were informative...the course was straightforward and the expectations were clear", and "one of the most organized courses I have had. All content and assignments were clearly spelled out and had a purpose."

Student Perceptions of the Instructor

To answer the second research question (Do online course design reviews impact student perceptions of the instructor?), the researchers analyzed the second six items of the student course evaluations through descriptive statistics. Four of the five courses saw increases in means for the instructor construct with no change in means for one course, as shown in Table 3 (see Tables and Figures). As shown in Table 5 (see Tables and Figures), the total means for each of the six items increased from pre- to post-Quality Matters course review. Through the student course evaluations, students more strongly agreed with each of the instructor construct items two semesters after the online course design review than two semesters prior to the online course design review. Students most strongly agreed with the statement "The instructor was concerned with whether or not the students learned the material" (M = 1.06). The next highest means were "The instructor was knowledgeable about the content" (M = 1.08) and "I received appropriate and timely feedback on my work" (M = 1.08). Students reported the most growth for the statement "The criteria for grading were clearly communicated" (M = 1.38 to M = 1.16).

From the open-ended responses collected two semesters after the online course design review, there emerged one dominant theme related to student perceptions of the instructor: providing timely feedback. Instructor feedback is addressed in Quality Matters Specific Review Standard 3.5 "The course provides learners with multiple opportunities to track their learning progress with timely feedback." Multiple responses spoke to this standard such as "[the instructor] provided quality feedback and did so in a timely manner. I loved it!", "I thought the instructor was very knowledgeable and helpful throughout the course. Any questions I had were answered in a timely manner", and "I greatly appreciated the feedback [the instructor] gave throughout this course. It was very helpful."

Discussion and Conclusions

Online graduate teaching and learning have experienced growth for at least two decades (NCES, 2020a; NCES 2021), yet the growth in online learning does not necessarily result in improvement in online course offerings (Shea, 2020) and new models of online learning are needed (Buch et al., 2018). This case study explored the impact of online course design reviews on student perceptions of the course and instructor as reported on student course evaluations. The findings indicate that means improved for all twelve items on the course evaluations, thereby demonstrating student perceptions of the course and instructor were more positive *after* the online course design reviews and Quality Matters certification.

This study supports previous research (Lynch & Gaston, 2020; Sadaf et al., 2019) which found that students perceived they learned more in courses that were Quality Matters certified. One of the largest improvements for the course construct in this case study was the item "The course increased my understanding of the content." Other related items for the course construct reflected similar growth, including "Instructional activities enhanced my learning experience" and "I attained the stated Goals/Objectives of this course." In Watson et al.'s (2017) study of master's students in a Mid-Western university, students provided their perceptions of what their instructors could do to improve their courses. The researchers collected responses and found the top ten most common responses were relevant to four of the eight Quality Matters General Standards. Participants noted the importance of Quality Matters Higher Education Rubric Fifth Edition (2014) General Standard 5: Course Activities and Learner Interaction. Sadaf et al. (2019) also found greater student perceptions of Quality Matters certified courses, especially regarding Quality Matters Higher Education Rubric Fifth Edition (2014) General Standard 5: Course Activities and Learner Interaction. Notably, in the present study the mean responses increased significantly for "I received appropriate and timely feedback on my work," a concept closely connected with Quality Matters General Standard 5: Course Activities and Learner Interaction.

Like previous editions of the rubric, the focus of the Quality Matters Higher Education Rubric, Sixth Edition (2018) is course design, not course content. In the student course evaluations, some of the items were associated with the Quality Matters Standards of online course design. For example, one item in the course evaluation that experienced an increased mean response was "Instructional activities enhanced my learning experience" which is reflected in the annotation language of the Quality Matters Specific Review Standard 5.1 "The learning activities promote the achievement of the stated learning objectives or competencies." Similarly, students reported the most growth for the instructor construct for the statement "The criteria for grading were clearly communicated," which clearly aligns with Quality Matters Specific Review standard 3.2 "The course grading policy is stated clearly at the beginning of the course." It is expected that items such as these would show an improvement after the Quality Matters course review as they are associated with specific standards on the Quality Matters Higher Education rubric.

However, there were other items in the student course evaluations that are not directly associated with Quality Matters Standards. For example, "The instructor was knowledgeable about the content" and "The instructor was concerned with whether or not the students learned the material." Although these are important factors in learning, they are not directly associated with Quality Matters standards on course design. Regardless, the means for these items increased following the Quality Matters course review. Thus, the Quality Matters Standards represent one possible way to combat a plurality of understandings about effective online course design (Debattista, 2018) and assure greater outcomes for students. The findings of this case study also suggest 'a rising tide raises all boats;' means for student perceptions of the effectiveness of both

the course and instructor—even for items that are not directly associated with the Quality Matters Standards—increased after Quality Matters review.

Recommendations and Calls for Future Research

Based on the findings in this case study, the researchers offer three recommendations. First, the use of Quality Matters course reviews as a valid means to assure a high-quality online student experience based on research-based best practices. Second, commitment to the achievement of Quality Matters certification for courses throughout a program should be a comprehensive team effort with everyone committed to a common goal to improve the online student experience. Finally, identify Quality Matters faculty champions to encourage, inspire, support, and lead other faculty through the challenging online course review process. This case study represents an exploration of the impact Quality Matters course reviews have on student perceptions of course and instructors. Case studies by nature are illustrative and suggestive. However, they are not conclusive, nor can they demonstrate generalizable causation. Future research with a larger data set is needed to determine if a statistically significant relationship exists between Quality Matters course reviews and student perceptions of courses and instructors. Such research might employ methods to assure changes to student perceptions can be attributed to Quality Matters course reviews and not some other factor, such as evolutionary improvements to the course over time. The lapse of at least three semesters between the initial data collection and the final data collection may have afforded natural improvements to the course and accounted for some of the improvements to course evaluation scores. Studies employing student interviews or other qualitative methods would provide an additional layer of understanding of Quality Matters course reviews and student perceptions of courses and instructors.

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Tables and Figures

Table 1

Student Course Evaluation Means and Standard Deviations by Instructor and Course Before and After Course Review

			Instrue	ctor #1			Instru	ctor #2		Instruc	tor #3
		Cour	se A	Cour	se B	Cours	se C	Cour	se D	Cour	se E
Iten	1	Before	After	Before	After	Before	After	Before	After	Before	After
1.1	The syllabus clearly communicated what was expected of me as a student	1.8	1.4	1.3	1.1	1.0	1.0	1.2	1.0	1.1	1.4
1.2	The course increased my understanding of the content	1.6	1.2	1.4	1.1	1.0	1.0	1.1	1.0	1.4	1.3
1.3	Class materials, including the text, were appropriate for this course.	1.6	1.2	1.4	1.0	1.1	1.1	1.2	1.0	1.5	1.3
1.4	Instructional activities enhanced my learning experience.	1.7	1.2	1.4	1.3	1.2	1.1	1.1	1.0	1.4	1.3
1.5	The assignments provided opportunities to apply new knowledge and/or skills.	1.7	1.2	1.4	1.1	1.0	1.1	1.2	1.0	1.3	1.3
1.6	I attained the stated Goals/Objectives of this course.	1.5	1.2	1.5	1.1	1.0	1.1	1.1	1.0	1.1	1.3
2.1	The instructor was knowledgeable about the content.	1.8	1.2	1.1	1.1	1.0	1.0	1.2	1.0	1.1	1.1
2.2	The instructor was well prepared for class.	1.6	1.2	1.1	1.1	1.1	1.0	1.1	1.0	1.0	1.3
2.3	The instructor was concerned with whether or not the students learned the material.	1.6	1.2	1.1	1.0	1.1	1.0	1.1	1.0	1.3	1.1
2.4	Assistance from the instructor outside of the class was available.	1.0	1.4	1.3	1.0	1.2	1.0	1.1	1.0	1.1	1.1
2.5	The criteria for grading were clearly communicated.	1.6	1.4	1.4	1.1	1.0	1.0	1.5	1.0	1.4	1.3
2.6	I received appropriate and timely feedback on my work.	1.5	1.4	1.3	1.0	1.2	1.0	1.3	1.0	1.0	1.0

Student Course Evaluation Means and Standard Deviations Pre- and Post- for Course Construct

	Instructor #1		Instructor #2				Instructor #3			
	Cour	se A	Cou	rse B	Cour	se C	Cour	se D	Cour	se E
Item	Before	eAfter	Before	<u>After</u>	Before	eAfter	Before	After	Before	<u>After</u>
1.1 The syllabus clearly communicated what was expected of me as a student.	1.8	1.4	1.3	1.1	1.0	1.0	1.2	1.0	1.1	1.4
1.2 The course increased my understanding of the content	1.6	1.2	1.4	1.1	1.0	1.0	1.1	1.0	1.4	1.3
1.3 Class materials, including the text, were appropriate for this course.	1.6	1.2	1.4	1.0	1.1	1.1	1.2	1.0	1.5	1.3
1.4 Instructional activities enhanced my learning experience.	1.7	1.2	1.4	1.3	1.2	1.1	1.1	1.0	1.4	1.3
1.5 The assignments provided opportunities to apply new knowledge and/or skills.	1.7	1.2	1.4	1.1	1.0	1.1	1.2	1.0	1.3	1.3
1.6 I attained the stated Goals/Objectives of this course.	1.5	1.2	1.5	1.1	1.0	1.1	1.1	1.0	1.1	1.3
M SD	1.65 0.10	1.23 0.08	1.40 0.06	1.12 0.10	1.05 0.08	1.07 0.05	1.15 0.05	1.00 0.00	1.30 0.17	1.32 0.40

Student Course Evaluation Means and Standard Deviations Pre- and Post- for Instructor

Construct

		Instructor #1		Instructor #2				Instructor #3			
		Cour	se A	Cour	rse B	Cours	se C	Cours	se D	Cour	se E
Iten	1	Before	After	Before	After	Before	After	Before	After	Before	After
2.1	The instructor was	1.8	1.2	1.1	1.1	1.0	1.0	1.2	1.0	1.1	1.1
	knowledgeable about the content.										
2.2	The instructor was well prepared for class.	1.6	1.2	1.1	1.1	1.1	1.0	1.1	1.0	1.0	1.3
2.3	The instructor was concerned with whether or not the students learned the material.	1.6	1.2	1.1	1.0	1.1	1.0	1.1	1.0	1.3	1.1
2.4	Assistance from the instructor outside of the class was available.	1.0	1.4	1.3	1.0	1.2	1.0	1.1	1.0	1.1	1.1
2.5	The criteria for grading were clearly communicated.	1.6	1.4	1.4	1.1	1.0	1.0	1.5	1.0	1.4	1.3
2.6	I received appropriate and timely feedback on my work.	1.5	1.4	1.3	1.0	1.2	1.0	1.3	1.0	1.0	1.0
	M SD	1.52 0.27	1.30 0.11	1.22 0.13	1.05 0.05	1.10 0.09	1.00 0.00	1.22 0.16	1.00 0.00	1.15 0.16	1.15 0.12

Total Student Course Evaluation Means and Standard Deviations Pre- and Post- for Course

Construct

Item		P	re-	Post-		
	_	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
1.1	The syllabus clearly communicated what was expected of me as a student	1.28	0.31	1.18	0.20	
1.2	The course increased my understanding of the content.	1.30	0.24	1.12	0.13	
1.3	Class materials, including the text, were appropriate for this course	1.36	0.21	1.12	0.13	
1.4	Instructional activities enhanced my learning experience	1.36	0.23	1.18	0.13	
1.5	The assignments provided opportunities to apply new knowledge and/or skills.	1.32	0.26	1.14	0.11	
1.6	I attained the stated Goals/Objectives of this course	1.24	0.24	1.14	0.11	

Total Student Course Evaluation Means and Standard Deviations Pre and Post for Instructor

Construct

Item		P	re-	Post-		
	_	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
2.1	The instructor was knowledgeable about the content	1.24	0.32	1.08	0.08	
2.2	The instructor was well prepared for class	1.18	0.24	1.12	0.13	
2.3	The instructor was concerned with whether or not the students learned the material	1.24	0.22	1.06	0.09	
2.4	Assistance from the instructor outside of the class was available	1.14	0.11	1.10	0.17	
2.5	The criteria for grading were clearly communicated	1.38	0.23	1.16	0.18	
2.6	I received appropriate and timely feedback on my work	1.26	0.18	1.08	0.18	