

## Satisfaction with Online Learning: A Comparative Descriptive Study

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### *Abstract*

*A 3<sup>rd</sup> party provider approached university faculty and administration to develop an on-line program for the Master's degree in educational administration and leadership. While the monetary benefits of an online delivery were attractive, the institution rested its final decision on the instructional merits of the plan. The faculty used a 3<sup>rd</sup> party provider for technical expertise, design, and student support for the program. A descriptive study was conducted to determine to what degree students were satisfied with the online program and their degree of satisfaction in comparison to on-ground courses. Results indicated that students in the online program were satisfied with the courses; however, they noted valuable concerns to be addressed. Implications of these findings are discussed.*

### **Introduction**

Institutions of higher education are creating courses and programs online to serve a student population that is more dispersed geographically: one that is older and less likely to be able to attend school full time and accustomed to on-demand interactions in other facets of their lives (Nicholson & Sarker, 2002). Fourteen accredited educational administration programs are listed by *e-Learners.com* accredited and fully online, serving hundreds, if not thousands of students (2005, ¶ 1), but many more programs have put part or all of their courses online. While the number of institutions online is growing, there is still a scarcity of empirical data on e-learning (Sheard & Markham, 2005).

Carlson (2005) stated that a new generation of college students has arrived. To meet the needs of these students, colleges must rethink how they operate; professors need to retool the way they hold their classes. Whether the issues include lectures on iPods (Tyre, 2005), classrooms that incorporate videos and video games, classes that meet virtually, students who choose to learn from each other rather than the professors, search engines that may or may not be reliable, or animated library databases, a new kind of student has arrived and pedagogy is changing.

Online learning opportunities are rapidly expanding in higher education. After the Associate's degree, the Master's degree is the second most prevalent type of program offered online (Allen & Seaman, 2004). Educational leadership programs face increased competition because of students' access to online programs regardless of their geographic constraints. Already dealing with criticism on the quality of preparation programs for school leaders (The Broad Foundation, 2005; Hess & Kelly, 2005; Levine, 2005), universities must ensure both high levels of student satisfaction and quality to attract and maintain student enrollment. This study presents a framework for considering student satisfaction, based on both on-ground and online courses, and evaluates changes in student satisfaction over time.

In 2005, the educational administration program of a private United States university began offering a Master's in Educational Administration and Leadership online in conjunction with a third-party, independent internet course delivery provider. The program courses were developed and taught by university faculty, who were assisted by course facilitators acting in the role of the traditional teaching assistant. All technical delivery matters were handled by the third-

party providers. This included videotaping introductory clips for every class session, loading course content, and ensuring that students knew how to navigate through the course material, post assignments, and participate in asynchronous discussions.

The purpose of this study was to determine the level of satisfaction with online learning, and to compare the perceived quality of the program to that of the on-ground delivery of the same program. The specific research questions were:

1. To what degree are students satisfied with the delivery and content of an online Master's program in educational administration and leadership?
  - a. What factors are related to satisfaction?
  - b. How do the course evaluations of the third course compare to the course evaluations of the seventh course offered in the online Master's program?
2. How does the level of satisfaction for two courses differ between online and face-to-face delivery?

*Conceptual Framework:* There has been a plethora of research on how to design the best learning experiences for students. According to Vonderwell and Turner (2005), with the convergence of technological, instructional, and pedagogical developments, a new paradigm of teaching and learning is emerging—one that has the potential to redefine education.

The number of online learning courses and programs has significantly increased over the past several years at both the K-12 and higher education levels. Nicholson and Sarker (2002) estimated that the worldwide market for e-learning would be approximately \$18.5 billion in 2005. Allen and Seaman (2004) surveyed 3,068 degree granting institutions of higher education with a 38.1% response rate. Results indicated that “over 1.9 million students were learning online in 2003” (Allen & Seaman, 2004, p. 1) with estimates of almost 25% growth in online learners in 2004. In higher education, online courses are offered at the undergraduate, master's, and doctoral levels (Allen & Seaman, 2004; *e-Learning.com*, 2005). Yet, despite the growth in online learning there is “a scarcity of systematic evaluative studies of web-based learning environments” (Sheard & Markham, 2005, p. 353).

There are over 600 graduate programs available in the United States offering studies in educational administration (Levine, 2005). These programs, with their online offerings, have erased almost all geographic barriers to accessing a graduate educational leadership program. The proliferation of online educational leadership programs has created new choices for students and thus has enhanced competition among programs. In this new environment, attention to student satisfaction is more important than ever (Allen & Seaman, 2004).

The majority of students taking at least one online course are at associate degree-granting institutions. The second most prevalent group of online students is composed of students in Master's programs (Allen & Seaman, 2004). Many surveys of student satisfaction with online programs do not differentiate between undergraduate and graduate students. Nevertheless, several researchers noted the benefits of online instruction (Allen & Seaman, 2004; Choy, McNickle, & Clayton, 2002; Quitadamo & Brown, 2001; Saunders, 2001). Benefits of online programs include: on demand learning, removal of geographic limitations to access, reduced cost of transportation for participation, and reduced building and/or maintenance fees for classroom space (Bataneh, 2001, as cited in Fuller & McBride, 2001). Bataneh further defined the typical online or distance learner as “non-traditional, a full time worker, a parent, living in a rural area, female with children, [or] a person with a disability” (2001, p. 17). While these findings are consistent across the online learning literature, they are not specific to graduate or professional programs.

Universities offering educational administration programs must attend to both programming quality as well as student satisfaction in order to be viable. Interestingly, there are few published studies on student satisfaction with graduate education. Smart (1987) found that students who pursued a graduate program similar to the major field of study of their undergraduate program were more likely to be satisfied with faculty-student and peer relations. The majority of the educational administration students in leadership preparation programs are teachers preparing to be building or district-level leaders (Levine, 2005); thus, they are in the same field of study and presumably more likely to be satisfied with faculty-student and peer relations. Indeed, Powers and Rossman (1985) discovered that graduate students' sense of satisfaction was related to professor-student interactions. In their survey of 107 students using the Student Satisfaction Questionnaire, Powers and Rossman found students' satisfaction with graduate education also was related to their sense of intellectual stimulation, freedom to influence school policies and procedures, intellectual stimulation of their peers, and the quality of the facilities.

While one can argue the survey used by these researchers was based on a face-to-face model of graduate study, the same instructional paradigm typically was experienced by the majority of students in the current online graduate programs throughout their learning career. Also, four of the five student satisfaction parameters may be translated to the online environment. The current literature in online instruction supports Powers and Rossman's (1985) findings with respect to professor-student interactions, intellectual stimulation, and peer interaction. Issues related to course design and delivery, such as data security and response time from the professor, also appeared to influence student satisfaction with online courses.

*Literature Review:* Course structure and design appear to be key elements related to student satisfaction with online learning. In a survey distributed by instructors in 28 institutions, Choy, McNickle, and Clayton (2002) found that of 201 responses, the following 10 services were most expected by students: (a) detailed information about what is required to complete the module/course; (b) detailed information about the courses; (c) security of personal details on the institute's database; (d) clear statements of what they are expected to learn; (e) helpful feedback from teachers; (f) requirements for assessment; (g) communication with teachers using a variety of methods, for example, email, online chat, face to face; (h) timely feedback from teachers; (i) instructions on whom to approach for help; and, (j) information on how to enroll (p. 5). In follow-up interviews, the researchers found "three key areas that students perceived as being essential . . . [including,] regular contact with teachers, quick response from teachers and regular support for learning" (Choy, McNickle, & Clayton, 2002, p. 5). Students in this study noted a need to improve teacher facilitation and technical systems.

In 1999, Hara and Kling conducted a qualitative study of an online graduate course enrolling six Master's students. Consistent with Choy, McNickle, and Clayton (2002) findings, Hara and Kling found student frustration and dissatisfaction is bred through lack of prompt feedback, technical difficulties, and ambiguous course instructions.

Samarawickrema (2005) studied whether students were ready for flexible, independent learning. Using an exploratory design with a questionnaire and focus group interviews, the researcher explored common problems, similarities, and differences among learners from South East Asia, local students from Australia, and other international students from Israel, Mauritius, Norway, Sri Lanka, and the United States. All subjects were in their first semester of their first year in undergraduate education and were given the option to be independent learners—not attending class. While learners in this study used only print resources, the findings were instructive for online teaching. The researcher found that independent learners experienced problems in managing time and looked to the teacher and the structure provided by the

classroom to discipline, regulate, and guide them through their work. Samarawickrema's findings, though not directly addressing the virtual classroom, were consistent with Choy, McNickle and Clayton (2002), in that course design needs to encourage a student's discipline and consistent approach to work.

The themes of student discipline and time management were reinforced by Vonderwell and Turner's (2005) case study at a large Midwestern university. One section of a technology applications course was offered online using the BlackBoard® online learning tool (Bb). Twenty-four students were enrolled; 22 of the students successfully completed the course. The syllabus, tutorials, and course exercises were all designed to encourage the students to be self-learners and evaluators of the quality and integrity of online content. The students, who were undergraduate pre-service teachers, were provided learning team activities that encouraged them to explore areas beyond what the course contained and to develop new ways to use computer instructions as a classroom tool.

Multiple sources of information were used to collect data: student interviews, e-mail, group discussion transcripts, journals, and course documents. All participants indicated that the online learning environment fostered their responsibility and initiative toward learning. Participants reported that they were more self-disciplined, had learned to manage their time, and were better able to use resources effectively. The students assigned words to their experience such as independent learning, free, open, and individualized.

Students reported that not being able to rely on an instructor's face-to-face classroom instruction forced them to use multiple resources to learn the content and become their own investigators in their learning. Perhaps the most important finding was that online instruction enabled students to reflect on their learning and to learn about themselves. Course design was a key element of course success in this study. Consistent with the finding of Powers and Rossman (1985) with respect to graduate study, peer interaction was also a key contributor to student satisfaction.

In a study comparing two sections of a graduate student course, one face-to-face and one online, Blocher and Tucker (as cited in Fuller & McBride, 2001) reported that more students taking the online course found the course to be better than expected than those who found the course to be what they expected or less than they expected. Students raised concerns with difficulties with technology and inadequate group participation by their peers.

While course design and structure impacted student satisfaction with online courses, Rosenfeld's study (2005) comparing online to face-to-face courses suggested that subject matter influenced student completion rates. Rosenfeld investigated and compared the achievement and completion rates of students in traditional on-ground classes to that of students in the same courses taught by the same instructors online. The mediating effect of the subject matter, student age, race, gender, and previous college or university experience also was examined. A sample of 796 students enrolled in general education courses offered on-ground and in the online format was studied. Approximately half of the students participated in each group. The researcher determined student achievement by final course grades and tested the data using an independent two-sample *t*-test. Completion rates were calculated using a two-sample *z*-test. Two-way ANOVAs were used to observe the impact of subject matter, age, race, gender, and previous college experience on student achievement and completion rates in both venues. A post-hoc analysis using the Tukey HSD procedure was conducted on any variables that tested to have a statistically significant effect on the academic achievement or completion rate.

Rosenfeld (2005) found that there was no difference in student achievement as measured by final course grades with either delivery form. She did find, however, that there was a statistically significant difference between completion rates of students enrolled in traditional

face-to-face courses compared to those in distance learning courses. The traditional face-to-face courses had higher completion rates compared to those in distance learning courses. The variable with the greatest mediating effect on academic achievement and completion rates between delivery methods was subject matter area.

According to Powers and Rossman (1985), professor-student interaction is a significant determinant of graduate students' sense of satisfaction. Diekelmann and Mendias (2005) looked at student-faculty relationships online, as virtual courses may change a teacher's customary way of knowing and connecting with students. They also noted that relationships may be even more complicated when group or team projects are assigned online. Using narrative pedagogy, teachers shared and interpreted their experiences of supporting and attending to students' knowing and connecting with each other in online courses. Online teachers used practices that set limits and rules and reassured group members of fair treatment. Diekelmann and Mendias reported that some faculty who taught online made a special effort to become a supportive presence in student-to-student knowing and connecting by emphasizing students' accountability to their groups. This was accomplished by posting notes, sending e-mail, and participating in discussion boards.

Diekelmann and Mendias (1985) further reported that for instructors, being a supportive presence included attending to and facilitating students' knowing and connecting with each other. Supportive online instructors moderated student interactions to ensure a mutually respectful environment in which students felt they were treated fairly and could ask questions and test ideas freely. In essence, the teacher needed to foster ways for students to know each other and connect in ways other than what might happen normally in face-to-face encounters. Consistent with Powers and Rossman (1985), the professor-student interaction was critical online as well.

Kraus (1998) studied administrator and faculty responses to distance education through a case study involving the development of the distance learning initiative for the State University of New York system (SUNY). Decision makers, proposal authors, and faculty participated in unstructured interviews. The researcher then searched for emergent patterns that might indicate similarities or dissimilarities in the responses between administrators, faculty, and institutions in the SUNY system. Kraus noted that this growing form of postsecondary education may be forcing a cultural change on higher education. This included changes in how teachers teach and how students learn, as well as how teachers and students and students and students interact. The researcher concluded that colleges and universities cannot deny this new, shifting, and expanding marketplace, although distance education will not be a replacement for traditional delivery.

Whitman et al. (2005) addressed student teamwork online in their quantitative research conducted at a Midwestern university. Forty-one students out of a class of 50 participated in the study. Participants in each of the control and treatment groups were similar on several variables (i.e., experience working in groups, knowledge of manufacturing principles before beginning the project, and years speaking and writing in English). All students used the Bb course management system to keep in contact and to meet with their team members. Project performance, selected group processes, and satisfaction of students randomly assigned to face-to-face and computer-mediated communication design teams were investigated. Student teams applied their problem solving skills and critical thinking to a simulated factory situation. Members of the virtual teams were told to meet with their fellow members only through the Bb system, not face-to-face, via telephone, or via e-mail unless such interaction went through the Bb system. Student progress working with teams during the course was monitored through questionnaires at [www.zoomerang.com](http://www.zoomerang.com). The teams were compared by final project grades, observable patterns in

group processes and member attitudes, and overall reported satisfaction with the team experience.

The results showed that final project scores were comparable; however, there was significantly more variability of scores in the computer mediated situation. This may have been influenced by the fact that the students in the computer groups were new to the use of technology as an exclusive means of communication and found the experience to be challenging. While the quality of the groups' projects was similar, the perceptions of effectiveness, satisfaction, and peer performance were significantly higher for the face-to-face teams. This being said, it should also be noted that in addition to both teams being able to complete the project successfully, they reported an overall positive experience. Many of the computer mediated team members said that this experience enhanced their communication skills, increased their awareness of technological challenges facing computer-reliant teams, and provided valuable experience for future job opportunities (Whitman et al., 2005). As educational institutions become more global, the use of computer-mediated technology is likely to continue to supplement and may even replace more traditional projects and teams.

Researchers have found that student satisfaction at the graduate level is related to faculty-student interaction, peer interaction, and a sense of intellectual stimulation of both the student and the student's peers (Powers & Rossman, 1985). These characteristics of student satisfaction were also found in studies of online courses at both the graduate and undergraduate level (Diekelmann & Mendias, 2005; Rosenfeld, 2005). Researchers of online courses further pointed to a number of issues that, if addressed, fostered student satisfaction. These issues included: timely, helpful communication with the instructor; clear directions regarding course expectations; student assignments and requirements; and, support for enrollment and data security (Choy, McNickle & Clayton, 2002; Hara & Kling, 1999; Vonderwell & Turner, 2005). These areas can be broken down into issues dealing with program content and delivery. Although researchers have noted ways to assure student satisfaction with e-learning, the data were not specific to online professional programs at the graduate level.

There continues to be a need to research student satisfaction with online programs both in present time as well as on a longitudinal basis. In order to investigate student satisfaction with online professional programs at the graduate level, the following questions were explored:

1. To what degree are students satisfied with the delivery and content of an online Masters' program in educational administration and leadership?
  - a. What factors are related to satisfaction?
  - b. How do the course evaluations of the third course compare to the course evaluations of the seventh course offered in the online Master's program?
2. How does the level of satisfaction for two courses differ between online and face-to-face delivery?

## **Methodology**

This descriptive study was a secondary analysis of end-of-course evaluations completed by graduate students in the Educational Administration and Leadership Master's program at a large United States university. Seven online courses were evaluated, ranging in participation from 9 to 41 students. At the same time that end-of-course surveys were conducted online, corresponding course evaluations were completed by students in two of the courses offered in face-to-face format in the same program.

The content questions of both the online and on-ground surveys were isolated in order to compare the level of student satisfaction with the quality of the program with respect to course goals, objectives, and faculty-student interaction. Similarly, questions related to course delivery were evaluated.

Student satisfaction with the online courses was evaluated. Comparisons were made with the level of satisfaction of the online students in their third and seventh course with respect to content and delivery elements. Similarly data from the on-ground surveys were compared with data from the same courses offered to the online group at both the third and seventh program course to discern differences in satisfaction for both groups in comparison to each other.

*Design and Procedure:* Data for this study was gathered through end-of-course evaluations. Each evaluation form provided a Likert scale for rating statements related to the content and delivery of the course. This study relied on extant data. While utilizing the same instructor pool in both the online and face-to-face delivery, the online courses were managed by a third-party provider who handled student recruitment, registration, and formatting of the courses for the online medium. In order to reduce data burden, the researchers relied on existing end-of-course evaluations. One survey was developed by the third-party distance learning provider and one was developed by the university. No attempt was made to align the evaluation forms for the study, which would have disrupted longitudinal data collection in either medium. The online evaluations also included a number of questions related to student services and technical support. In addition to the Likert-scaled items, each survey provided the respondent an opportunity to make additional comments. Using two different surveys is a limitation of this study. Future researchers should design studies that utilize the same survey for all courses, except for the items that are unique to the respective delivery modes.

There was no attempt to match instructors or students in the study design. While the same course was compared across mediums, each course was taught by a different instructor. While the online courses were sequenced third and seventh, because students can enroll in the program at any eight-week interval, only those students enrolled in the third course were actually enrolled in both online courses. Each of the corresponding face-to-face courses had mutually exclusive student enrollments.

*Participants:* The sample for this study included all students who were enrolled in the first seven courses of the online Master's in Educational Administration program. There are 11 required courses in the program overall. For comparison, two corresponding classes of on-ground delivery were also reviewed. The numbers in each class are noted in Table 1.

**Table 1: *Number of Students Enrolled in Each Class***

Online course number	Number of students
248	9
278	20
246	26
276	20
205	23
295	41
On-ground course number	Number of students
246	15
276	13

*Data Analysis:* All data collected were ordinal, which only allowed the responder to indicate one pre-defined category on a scale. Likert scales were converted to a five-point scale for analysis. Not all scales were the same on the university survey; two response items were converted to five-point scales. Survey items were analyzed using descriptive statistics. Mean responses of each item were calculated for the online survey and for items related to content and delivery. Means were calculated for two corresponding on-ground courses. The means of the on-ground and online courses were compared as well as the means of two online courses, the third course, and the seventh course, to gauge changes in perception as the program developed.

Survey items were categorized with respect to content items and delivery items for each survey. In order to compare the content items from the online and face-to-face survey, the items were matched as noted in Table 2. Table 3 depicts the matched items from the face-to-face to the online survey for the delivery questions.



**Table 2: Comparison of Online to On-ground Questions, Content**

Online	On-ground
Q5: The goals of this course were clearly stated at the beginning of the course.	Q1: The objectives of this course have been made clear.
Q32. My expectations for this course were met.	Q2: In my opinion, the objectives of this course have been accomplished.
Q26. The grading criteria were clearly communicated at the beginning of the course.	Q6: The instructor informed students how they would be evaluated in the course.
Q25. The workload demands for this course were realistic for an online course.	Q8: The workload for the course in relation to other courses of equal weight was (much lighter to much heavier).
Q9: The textbook supported the intended learning outcomes for the course.	Q10: Overall, I would rate the text, reading, and other materials (excellent to poor)
Q10. Other reading materials assigned were relevant to the course objective.	
Q11: The content of the videos was relevant to the learning outcomes of the course.	
Q32. My expectations for this course were met.	Q11: I would rate the overall value of the course as (excellent to poor)
Q21. The instructor was supportive and responsive to my questions.	Q12: Compared to the other instructors you have taken courses with at GWU or elsewhere, how effective has the instructor been in this course

**Table 3: Comparison of Online to On-ground Questions, Delivery**

Online	On-ground
Q22. I was satisfied with the response time I received from my instructor.	Q3: The instructor was readily available for consultation with students.
Q7: The learning activities were relevant to the goals of the course.	Q5: The instructor used class time well.
Q14. I found it easy to participate in discussion questions.	Q7: The instructor made learning an active process by stimulating thought, encouraging participation, and guiding discussion.
Q27. I found it easy to communicate online with other students.	Q9: Taking into account the instructor's methods, the class size was (too large to too small)
Q21. The instructor was supportive and responsive to my questions.	Q12: Compared to the other instructors you have taken courses with at GWU or elsewhere, how effective has the instructor been in this course (top 10% to below average)

## Results

*Satisfaction with online courses:* Overall, the online courses received strong ratings. No item's mean was below 3.59, with the highest mean at 4.54 on a five-point scale. In addition, those items with the lowest means had the highest variability in response (standard deviations).

The overall mean for the content items was 4.19, with the weakest areas related to instructional videos used in courses and workload demands. In contrast, the areas scored the highest by students online were related to the clarity of goals and objectives of the course and the relevancy of the course material for the respondents' career pursuits. The data indicated a greater degree of satisfaction with the delivery of the online courses. The overall mean for items related to delivery was 4.33. Table 4 depicts the mean of the means of all content and all delivery questions. When compared with the means for content, this difference was found to be significant at the .05 level ( $p = .000$ ). The area reported to be the weakest was response time from the professor, while respondents reported the strongest area related to online course delivery as the technical support received by the third-party provider.

**Table 4: Mean of the Means Content and Delivery Items Online**

	N	Minimum	Maximum	Mean	SD
Means Content	21	3.59	4.52	4.19	.28
Means Delivery	11	3.91	4.54	4.33	0.19

In an effort to determine how the course evaluations changed over time, two online courses were compared, course numbers 246 and 276. These courses were offered third and seventh in the program, respectively. The premise for this analysis was that course evaluations should be higher for courses taught later in the program, based on the experience of the earlier courses taught. Indeed, the vast majority of content item means increased from the third course to the seventh course. The only items that did not show a statistically significant difference were related to reading materials, video content, and course content related to career and professional goals.

Items related to delivery also were compared across the two courses. Every delivery item increased in value from the third to the seventh course, except for the last item related to resolving problems with technical support, which scored the same across the two courses. It should be noted that this element is provided by the third-party provider and would be expected to be the same across the courses. Of the 11 paired delivery items, 6 differences were statistically significant at the .05 level from the third to the seventh course. These items were related to location and access to course content, instruction on how to use media technology, relevancy of learning activities, participation in discussion, and communication with other students. Based on the data, the level of satisfaction with online courses does improve over time.

*Comparison of online to on-ground courses:* Finally, the level of satisfaction between the online and the on-ground courses was evaluated. The mean content and delivery scores for the on-ground course were 4.68 and 4.88, respectively. This is compared to 4.19 and 4.33 for online course. The difference between the means of the online course content and delivery and the on-ground course content and delivery was found to be statistically significant at the .05 level ( $p = .037$ ).

**Table 5 Overall Comparison between Online and On-ground Course Satisfaction**

	Content	Delivery
Online	4.19	4.33
On-ground	4.68	4.88

Of the nine comparison variables for content items evaluated across the two mediums in course 246, the difference between the means of four items were found to be statistically significant (see Table 6). The significant differences related to the students' sense that the course objectives were met, clear grading criteria were provided, workload was reasonable, and instructor effectiveness was noted. These four areas also were noted in the difference between the third course (246) and the seventh course (276) online.

Of the five comparison variables for delivery items evaluated across the two mediums in course 246, four differences of the means were found to be statistically significant. Areas of significance included instructor availability and response time, class size, participating in discussion, and instructor effectiveness. See Table 7 for the comparison data.

**Table 6 Comparison of course 246 Online to On-ground, Content Items**

Variables	Means	S D	Significance 2-tailed
Objectives clear	4.80	.414	.271
Goals clear	4.60	.507	
Objectives met	4.80	.414	.010
Expectations met	3.93	1.099	
Told how evaluated	4.93	.258	.010
Grading criteria communicated	4.00	1.195	
Workload same	4.46	.915	.002
Workload realistic	2.66	1.345	
Materials	4.00	.926	.849
Textbook	4.06	.883	
Materials	4.00	.926	.271
Other reading	4.40	.828	
Materials	4.00	.961	.292
Other video	4.35	.633	
Overall value	4.58	.515	.189
Expectations met	4.00	1.206	
Instructor effective	4.83	.389	.001
Supportive/responsive instructor	3.08	1.311	

**Table 7 Comparison of course 246 Online to On-ground Delivery, Delivery Items**

Variables	Means	Standard Deviation	Significance 2-tailed
Instructor available	4.85	.376	.000
Instructor response time	2.84	1.344	
Instructor use of class time	4.87	.352	.070
Learning activities relevant	4.26	1.099	
Guiding discussion	5.00	.000	.000
Discussion participation	3.50	1.160	
Class size	5.00	.000	.000
Student Communication	4.26	.457	
Instructor effective	4.83	.389	.001
Supportive/responsive instructor	3.08	1.311	

As previously noted, overall the on-ground courses scored higher on the end-of-course evaluations than the online courses; however, the seventh online course evaluations (276) were rated higher by the students than those for the third online course (246). Interestingly, while four of the content items in the 276 on-ground course were rated more highly than the content items of the online course, none of those differences were significant at the .05 level. Likewise, none of the mean differences of the delivery items in the on-ground and online courses were statistically significant.

Given the quality differences in the 246 and 276 online courses, differences among the online and face-to-face course evaluations may be due to the comparatively low course evaluations of the 246 online course.

Data from the first seven online courses and two comparison on-ground courses revealed that overall students were more satisfied with the delivery of on-ground courses than the online courses. Within the online courses, students were more satisfied with the delivery aspects of those courses than the content aspects of the course. It should be noted, however, that one online course received a very low evaluation, which may be skewing the online data. Areas of particular content weakness noted on the evaluations of the online courses included: instructional videos used in courses, workload demands, and response time of the professor. Areas of strength included clarity of goals and objectives, relevancy of material, and technical support from the third-party provider. Data suggested that student satisfaction with the online courses increased from the third to the seventh course. Interestingly, comparisons between the seventh online course and its face-to-face counterpart revealed no statistically significant differences in the mean item responses in either the content or delivery areas.

## Discussion

Higher education programs are increasingly moving into the online market place in response to the changing demographics of the post-secondary learner and new expectations for on-demand learning. Given the growth in the online education market, geographic barriers to instruction are almost nonexistent. Web-based instructional programs create competition for students that were heretofore geographically bound to a local college or university. While the quality of a program is certainly the first measuring stick for program evaluation in today's market, higher education institutions also must consider student satisfaction. Much of the research on student satisfaction with respect to higher education is related to undergraduate

education. One study related to student satisfaction with graduate education noted that student satisfaction is related to faculty-student interaction, peer interaction, and a sense of intellectual stimulation of both the student and the student's peers (Powers & Rossman, 1985). Data from studies of online courses also suggested peer interaction, faculty-student interaction, and subject matter are important contributors to student satisfaction (Diekelmann & Mendias, 2005; Rosenfeld, 2005). Findings from this study suggested that faculty-student interaction and peer interaction are two important elements to online learning at the graduate level as well.

Studies of online programs further pointed to a number of issues that, if addressed, fostered student satisfaction. These issues included timely, helpful communication with the instructor; clear directions regarding course expectations, student assignments and requirements; and support for enrollment and data security (Choy, McNickle, & Clayton, 2002; Hara & Kling, 1999; Vonderwell & Turner, 2005).

The program under study received weaker evaluations with respect to timely, helpful communication with the instructor. This may be due to the larger online class sizes; however, the online courses under study all had facilitators with the ratio of 1 facilitator for every 15 students. The nature of the online discourse created by the instructor or the relative infancy of the online program also may be a factor in the weaker communication ratings. Faculty who try to recreate face-to-face interaction, primarily mediated through the instructor in the online environment, may be facing a maelstrom of postings they find difficult to manage. Alternatively, students new to this environment also may need to be acculturated to the notion of peer-to-peer and self-initiated learning moderated by the instructor, but not directed by the instructor. According to Vonderwell and Turner's (2005) case study, students may ultimately find online courses offer a more rewarding educational experience.

The study program received relatively stronger feedback with respect to technical support. In this case, the online technical support is primarily provided by a third-party, for-profit company. While the university has the capability to provide such support in-house, the quality control in an organization solely focused on online instruction should not be underestimated. One of the most highly rated evaluation items on the online course evaluation included the comment, "Technical support was available whenever I needed it."

Data from prior studies suggested that clarity of student expectations, assignments, and requirements is important to undergraduate online learners (Choy, McNickle, & Clayton, 2002; Hara & Kling, 1999; Vonderwell & Turner, 2005). This appeared to be an important element of online coursework at the graduate level as well. Students evaluated the courses weaker in the areas of clarity of assignments, grading criteria, and professor interaction. This suggests students wanted more and timely feedback on their assignments. This critique is an area to which faculty might want to be especially sensitive.

One area heretofore not explored in the online graduate literature is the workload level. Responses to the online evaluations and comparisons to on-ground courses indicated that students felt a much heavier workload in the online medium than face-to-face. This may be due to the nature of online study. Typically, in an on-ground classroom, every student is not responsible for answering all questions. In an online program, when each student is required to pose a response, students cannot "hide" in the crowd. The area of perceived workload merits further study.

The comparison of the online to on-ground 276 courses suggests that students can be equally satisfied with both course delivery models in a graduate educational administration program. The differences in student evaluations between the online and on-ground versions of the course were not statistically significant. While intra-program comparisons were attempted, it is hard to draw conclusions based on the two courses studied as there was significant

improvement in course evaluations from the third to the seventh course. More comparison studies are needed in the area of delivery models. Future studies should compare student satisfaction with other online and on-ground courses taught in the Master's program.

*Implications:* Powers and Rossman (1985) found student satisfaction with graduate education related to professor-student interactions, intellectual stimulation, and peer interaction. As a result, programs should ensure that online class sizes remain small so that student satisfaction can be accomplished. Prior studies also revealed the importance of course design and delivery (Choy, McNickle & Clayton, 2002; Vonderwell & Turner, 2005). These were made more compelling by this study, given student feedback on clarity of assignments, timeliness of feedback, and interaction with faculty. Another manifestation of student concern about design and delivery may be related to whether or not the student is ready to be an autonomous learner. Watkins, Leigh, and Triner (2004) found that the e-learner is not always ready for online course work. Initially, the online learner may need more direct instructor attention than the on-ground learner.

These implications certainly impact staffing, whether it is at the faculty or teaching assistant level. In addition, if students need much closer supervision or more frequent interaction, faculty course load will need to be evaluated. Staffing and course load impact budgeting for colleges and universities. Program faculty have voiced their fears that the university will not consider the faculty need to interact with online students and monitor their progress more frequently as pertinent concerns in determining faculty load. In addition, the findings from this study suggest that e-learning at the graduate level may allow institutions to draw on a larger student pool. Yet, program administrators and faculty may not be able to achieve economies of scale (i.e., larger class size) and maintain comparable student satisfaction and engagement levels.

Finally, there may need to be instructional units developed to assist learners in preparing for e-learning, aside from students having the appropriate hardware and software for learning success. The best designed course possible will be to no avail if students do not have the skills to manipulate the hardware and software programs and electronic libraries or the ability to take responsibility for their own learning.

*Further Study:* Online programs are here to stay. Their reach creates new competition in a market place that once was defined by geographic boundary. The key for educational administration faculty is to learn what elements are most important to successful on-line instruction and to learn how to address those elements in programming. The results of this study suggested that clarity and instructor availability will be keys for the future of this type of instruction: this may have implications for staffing, course load, student accountability, and grading. Longitudinal study is warranted to ensure that online programs meet student needs and maintain quality over time. In addition, researchers need to vary designs and methodologies in the study of online programs to not only compare online and on-ground instruction and learning, but also assess the importance of the findings. The growth of e-learning makes more in-depth study imperative. More focus on summative, rather than formative data, should be the focus of this research.

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