PERCEPTIONS OF GRADUATE STUDENTS TAKING ON-LINE AND ON-CAMPUS COURSES

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Abstract

The purpose of this study was to examine factors related to a graduate student's decision to take on-line courses in agricultural and extension education and to determine if differences exist in perceptions related to the seven principles of good practice in on-line courses and on-campus courses in a graduate program. The population for this study was all graduate students who had taken at least one on-line course and one on-campus course in an Agricultural and Extension Education graduate program. The theoretical framework for this study was based on Chickering and Ehrmann's (1996) explanation of technological strategies for the "Seven Principles of Good Practice" for teaching at the university level. Findings suggested that a major factor in students' decisions to enroll in distance education courses was the "convenience" factor; however, there is a trade off for this convenience. On-line courses do not compare favorably with on-campus courses in regards to the interaction between students and students and professors. On-campus courses were viewed more favorably in regards to the principle "Good Practice Respects Diverse Talents and Ways of Learning." Students did not perceive distance education courses to be easier than on-campus courses.

Introduction

In recent years, distance education has become a common mode of delivery of university courses due to the increase of students' accessibility to the Internet (Moore & Kearsley, 1996). In 2003, Roberts and Dyer found that 35% of agricultural education departments identified in the American Association of Agricultural Education directory offered distance education courses and 83% of those offered distance education graduate courses.

Much of the research related to the quality and effectiveness of distance education has focused on issues peripheral to teaching and learning such as student characteristics and attitudes. Hanson and his colleagues (1997) found that students who have taken distance education courses are more likely to be favorable toward distance education courses in general. In a comprehensive review of research, Thompson (1998) concluded that most research regarding characteristics of students

have found that students who take distance education are married, female, older than the typical undergraduate, and likely to be a full-time employee. He also detected a trend that students take distance education as an alternative because of their personality, learning style, and motivation not because they are place bound. Wilson and Moore (2002) found that GPA, years in the profession and occupation explained some of the variance in those students who plan to enroll in distance education in a graduate agricultural and extension education program. They did not find gender, distance, age, or prior experience to be a factor.

A majority of distance education studies in agricultural and extension education conducted between 1992 and 2001 focused on the quality, effectiveness, and technology of distance education (Moody, Schauer, Fritz, King, & Rockwell, 2002). Ample research exists related to studies of students enrolled in one distance education course. Recently, Dooley, Lindner, and Richards (2003) found that students in a 15-week-

long graduate course offered both on-line and on-campus achieved similar learning outcomes regardless of students' gender, degree, major, or the method of course delivery. They concluded that it is the method, not the media, that makes a difference in the quality of agricultural and extension education courses. Dooley, Patil, and Lineberger (2000) concluded that instructor contact and feedback was an integral part of an on-line multidisciplinary course delivered at a distance. Male and female students were compared in an on-line course by Hynes, Lindner, Dooley, and Price (2003). Overall performance of both males and females were similar but different patterns of voluntary course participation were observed.

Research regarding total agricultural education distance education programs is beginning to emerge in the literature as early adopter programs begin to graduate students. Kelsey, Lindner, and Dooley (2002) interviewed 18 students to determine their satisfaction with an on-line doctoral program called "Doc-at-a-Distance" shared by Texas A&M and Texas Tech University. They found that the students were very satisfied with the instructional design of the program, the support they received from others, and the convenience that the program offered. Students were dissatisfied with poorly functioning technology, inaccessible resources and cohort isolation. D'souza and Kelsey (2003) interviewed all students in a program who had taken distance education courses over a two year period and found that students enjoyed and benefited from instructor interaction but student to student interactions were not critical to their satisfaction.

In a literature review, Zirkle (2003) concluded that a majority of research in Career and Technical Education has dealt with issues of student access, characteristics, perceptions and performances, and faculty/instructor involvement in individual distance education courses. He also concluded that there was little research in career and technical education related to teacher education and that such research is warranted, especially research related to entire distance education programs.

Much research outside agricultural and extension education has been conducted in an attempt to determine if distance education courses are equal to on-campus courses in meeting learner outcomes. Russell (1999), after reviewing some 300 studies, concluded there was no significant difference between distance and on-campus courses. Merisotis (1999) stated that we should give up the "what's the difference" discussion because technology is here to stay. Instead, he argues that we should focus on where it makes a difference and on identifying effective strategies using technology to impact student learning.

In 1999, The Institute for Higher Education Policy conducted a review of distance education research for the American Federation of Teachers and the National Education Association. The review identified gaps in distance education research and suggests that most research conducted focuses on individuals in one or two courses and that research needs to be conducted to determine if an academic program delivered both through technology and traditional modes compare favorably. The reviewers hypothesize that even though distance education research as a whole is inconclusive, this new wave of research has revived discussion related to effective teaching and as a result has had a "salutary effect in that a rising tide lifts all boats" (p. 8).

Theoretical Framework

Limited research related to distance education has been conducted in agricultural and extension education that compares on-line and on-campus courses in relation to the use of distance education technology to perform good pedagogical practices. This study determined whether differences exist in students' perceptions related to the seven principles of good practice in on-line courses and on-campus courses in an agricultural and extension education graduate program.

After examining decades of research related to good teaching practices at the university level, Chickering and Gamson (1987) published the hallmarks of quality education in a university setting which are

known as the "Seven Principles of Good Practice." These principals are commonly cited in literature. Since 1987, the use of technology at the university level has increased exponentially and Chickering and Ehrmann (1996) realized the new technologies should be used in ways consistent with the Seven Principles to ensure effective teaching. They were concerned that teachers would not understand that technology can support different instructional strategies and that computers alone do not empower students. In response, they created appropriate ways to use the technological components of on-line distance education programs to ensure the seven principles were met and quality educational programs were conducted.

The theoretical framework for this study is based on the technological strategies for the "Seven Principles" presented by Chickering and Ehrmann (1996, p. 3). The strategies are as follows:

1. "Good Practice Encourages Contacts Between Students and Faculty"
2. "Good Practice Develops Reciprocity and Cooperation Among Students"
3. "Good Practice Uses Active Learning Techniques"
4. "Good Practice Gives Prompt Feedback"
5. "Good Practice Emphasizes Time On Task"
6. "Good Practice Communicates High Expectations"
7. "Good Practice Respects Diverse Talents and Ways of Learning"

According to McDonald (2002), on-line education can achieve these practices just as well as on-campus education and, in some instances, can do an even better job. For example, asynchronous communication can provide a protected environment for those students who do not feel comfortable in group discussion, or a slower paced environment is provided where adults can take their time to ponder their responses. Instructors can also clarify expectations and provide samples of model work for students. Most studies related to distance education have dealt with the comparison of

students in one course or students who have taken only one distance education course. This study took place in a department that has been teaching on-line courses since 1998 and is currently offering more than 15 graduate level courses on-line. Typically, six to eight on-line graduate courses are taught each semester. Students can complete 75% of their Master's program through on-line courses. WebCT is used in the delivery of some of the courses while others are stand-alone independent web classes. The distance education efforts of the department received an Honorable Mention for Excellence in Distance Education from the American Distance Education Consortium in 2004.

Purposes/Objectives

The purpose of this study was to examine factors related to a graduate student's decision to take on-line courses in agricultural and extension education and to determine if differences exist in perceptions related to the seven principles of good practice in on-line courses and on-campus courses in a graduate program.

More specifically, the study answered the following research questions:

1. What factors impact graduate students' decisions to take on-line courses?
2. Do graduate students perceive a difference between on-line and on-campus courses in the implementation of the Seven Principles of Good Practice?
3. Do graduate students who have completed four or more on-line courses perceive a difference between on-line and on-campus courses in the implementation of the Seven Principles of Good Practice when compared with students who have completed three or fewer on-line courses?

Methods/Procedures

The research design for this study was primarily descriptive. The population for this study was all graduate students who had taken at least one on-line course and one on-

campus course in the Agricultural and Extension Education graduate program at North Carolina State University during the past five years.

A questionnaire was developed based upon variables related to principles of quality on-line education identified in the literature review. The instrument was reviewed by a panel of experts made up of four Agricultural Education and Extension faculty for content/face validity. The instrument was then administered to a pilot of 21 participants who were not in the final study. The instrument had three main sections; demographic data, a list of eight factors that might influence a student's decision to take an on-line course, and 28 items designed to measure student perceptions of on-line and on-campus courses.

In constructing the main section of the instrument (the 28 statements), the

Seven Principles of Good Practice formed the framework. Three statements designed to measure each principle were developed. Thus, there were 21 statements to assess the implementation of the Seven Principles. Seven additional statements to assess the overall satisfaction of the student with the courses were also developed.

A Cronbach's Alpha for internal consistency was calculated for each of the seven sections of the instrument and the overall section. Since each of the seven "principles" sections contained only three statements, one would not expect high coefficients of internal stability. However, six of the principle sections and the overall evaluation yielded respectable coefficients. The Cronbach's alpha coefficient for each section of the instrument are as follows in Table 1.

Table 1
Internal Consistency of the Survey Instrument

Seven Principles of Good Practice	N^a	Cronbach's Alpha
Good Practices Encourages Contact Between Students and Faculty	3	.64
Good Practice Develops Reciprocity and Cooperation Among Students	3	.84
Good Practice Uses Active Learning Techniques	3	.78
Good Practice Gives Prompt Feedback	3	.61
Good Practice Emphasizes Time on Task	3	.32
Good Practice Communicates High Expectations	3	.57
Good Practice Respects Diverse Talents and Ways of Learning	3	.62
Overall Course Evaluation	3	.82

[a] N = number of items

The instrument and cover letter were mailed to all students whose current addresses could be found in the North Carolina directory for agricultural education teachers, extension agents and university students (n=143). Three weeks after the initial mailing, a follow-up letter was sent to those participants who had not responded along with another copy of the instrument. After two mailings, 109 students had responded to the survey for a total response

rate of 76% (two returned surveys were blank). The late responders were compared with the early responders. There were no significant differences found between the two response groups on items measuring students' perceptions of the on-line and on-campus courses ($t = 1.55$, $p = .124$).

Descriptive statistics and t-tests were used for data analysis. In analyzing the data, each of the seven principles and the overall satisfaction measure were treated as separate

constructs. It would have been inappropriate to consider all 28 items as additive. Also the eight possible reasons for taking distance education courses were each treated independently. It is acknowledged that this approach could possibly lead to a type I error, because of using several t-tests to examine group differences, but the character of the data required this type of data analysis.

Findings

The experience with on-line courses varied greatly among the respondents. Twenty-six percent of the respondents had completed only one on-line course, while at the opposite end of the spectrum; thirty-one percent had completed six or more courses. Twenty-four percent of the respondents had completed two to three on-line courses while 16 percent had taken four to five on-line courses. These data are presented in Table 2.

The majority of the respondents (57%) were employed with the Cooperative Extension Service while 37% were teaching agriculture. The most commonly given reason for taking on-line courses was completing a graduate degree (71%), followed by obtaining a teaching license (22%). Females outnumbered males by 55% to 45%. The mean age of the respondents was 39 years, and the mean distance from the students' home to the university was 151 miles as seen in Table 2.

Table 2
Characteristics of Respondents (N=107)

Items	N	%
Number of On-line Courses Completed		
1 Course	28	26.2
2-3 Courses	26	24.3
4-5 Courses	17	15.9
6 or More Courses	33	30.8
Missing	3	2.8
Current Employment Status		
Work in extension	61	57.0
Teaching	40	37.4
Private sector	4	3.7
Other	2	1.9
Reason for Taking On-line Courses[a]		
To complete a graduate degree	76	71.0
To obtain a teaching license	23	21.5
Personal reason	18	16.8
Other	11	10.3
Gender		
Male	48	44.9
Female	59	55.1
Distance and Age	*M*	*SD*
Mean Distance From NCSU in miles	150.68	206.13
Mean Age in years	39.00	10.30

[a]Respondents could select more than one

Students were asked to rate the factors that impacted their decision to take a distance education course. Of the eight choices, three items were rated higher than 4 on a 5-point Likert-type scale. These three factors were "I did not have to travel to campus" ($M = 4.51$, $SD = 1.02$), "Allowed me to continue work" ($M = 4.38$, $SD = .98$) and "I like the convenience of learning at the time of my own choosing" ($M = 4.01$, $SD = 1.11$). "Did not disrupt my family life" with a mean rating of 3.96 ($SD = 1.27$) followed closely. The idea popular with some people that distance education courses are easier was not a factor in the students' decision-making process. The statement "I believed that an Internet course would be easier than an on-campus course" had a mean rating of 1.80 ($SD = 1.09$). The ratings of the factors impacting students' decisions to enroll in a distance education class are presented in Table 3.

Table 3
Factors Impacting on Students' Decisions to Take Distance Education Courses

Factor	*M*	*SD*
I did not have to travel to campus.	4.51	1.02
Allowed me to continue to work.	4.38	.98
I like the convenience of learning at the time of my own choosing.	4.01	1.11
Did not disrupt my family life.	3.96	1.27
I prefer this approach to learning	2.68	1.08
The course(s) was (were) available only by distance education.	2.68	1.43
The cost of the Internet course[a]	2.67	1.41
I believed that an Internet course would be easier than an on-campus course.	1.80	1.09

Note. Rating Scale was from 1-5 with (5) Major Factor, (3) A Factor, (1) Not a Factor
[a]Internet courses cost less than on-campus courses at this university

This research sought to determine if on-line courses were equal to on-campus courses in fulfilling the widely regarded Seven Principles of Good Practice that were first promoted by the American Association for Higher Education. For each of the seven principles, three statements were constructed to measure that construct. There were an additional seven statements to ascertain the overall attitude of the student toward the courses. Thus, there were 28 statements on the instrument.

The rating scale ranged from 1 to 5 with a 3 being "No difference between On-campus and Internet Courses". A rating of 1 was "On-campus Courses Much More than Internet Courses" and a rating of 5 was "Internet Courses Much More than On-campus Courses." Therefore, ratings below 3 indicated on-campus courses excelled on the principle, while ratings above 3 indicated on-line courses excelled on the principle. After examining the mean scores, range of scores and standard deviations, the researchers established a practical significance range of 2.75-3.25. Any score in this range was considered neutral.

Three principles were found that favored on-campus courses, one principle was found that favored on-line courses, and three principles were in the neutral zone. The teaching principle the farthest distance from the 3.0 mid-point was "Good Practice Develops Reciprocity and Cooperation Among Students." The three statements that comprised this principle had a mean score of 2.04 ($SD = .66$). On-campus courses are seen as promoting more interaction among students than are distance education classes. The statements that comprised this principle and their mean scores are found in Table 4.

The next most distant principle from the midpoint was "Good Practice Encourages Contacts Between Students and Faculty." The three statements that comprised this principle had a mean score of 2.41 (*SD* = .63). On-campus courses are seen as promoting more interaction among the students and professors than are distance education classes. The lowest rated item on the instrument was found embedded in this principle, "Opportunity for interaction between students and professors," with a mean score of 1.73. The statements that comprised this principle and their mean scores are found in Table 4.

The third teaching principle that favored on-campus instruction was "Good Practice Respects Diverse Talents and Ways of Learning." The mean score on this principle was 2.65 (*SD* = .56). Of the three statements that comprised this principle, one of the statements lowered the score substantially. That statement was "A variety of teaching activities were used" with a mean score of 2.31. On-campus courses are seen as using more varied teaching activities and recognizing individual differences more than distance education classes. The statements that comprised this principle and their mean scores are found in Table 4.

The teaching principle that favored on-line courses was, "Good Practice Emphasizes Time on Task." This principle had a mean score of 3.31. This is in accordance with the reasons given for taking distance education classes mentioned in Table 3. The highest rated item on the instrument was found within this principle, "I was able to use my time more efficiently" with a mean score of 4.01. The statements that comprised this principle and their mean scores are found in Table 4.

The three principles that fell in the neutral zone were "Good Practice Uses Active Learning Techniques," "Good Practice Gives Prompt Feedback," and "Good Practice Communicates High Expectations." The overall course evaluation also was in the neutral zone. The statements that comprised these items and their mean scores are found in Table 4.

Table 4
Student Perceptions of On-line and On-campus Courses Categorized According to the Seven Principles of Good Practice

Principles and Contributing Statements	*M*	*SD*
1. Good Practice Encourages Contacts Between Students and Faculty	2.41	.63
Opportunity for interaction between students and professors	1.73	
Communication between the student and the professor was easily carried out	2.68	
Instructor is available when I needed help	2.84	
2. Good Practice Develops Reciprocity and Cooperation Among Students	2.04	.66
Opportunity for interaction between students	1.89	
Opportunity to collaborate with other students	2.04	
I am able to express my ideas to other students	2.19	
3. Good Practice Uses Active Learning Techniques	2.78	.71
Ability of the course to engage me in the content	2.58	
Promotes active learning	2.79	
Opportunity to apply information learned	2.95	
4. Good Practice Gives Prompt Feedback	2.88	.48
The feedback I received helped me to improve my academic performance	2.84	
My questions were answered appropriately	2.86	
Received feedback on my assignments in a timely manner	2.96	
5. Good Practice Emphasizes Time on Task	3.39	.58
Amount of time I spent on the course	3.22	
I was able to use my time more efficiently	4.01	
Course assignments were reasonable	2.93	
6. Good Practice Communicates High Expectations	3.14	.54
I learned a lot	2.88	
Academically challenging	3.12	
Amount of work required	3.39	
7. Good Practice Respects Diverse Talents and Ways of Learning	2.65	.56
Individual needs of learners were accommodated	2.79	
Instructor cares about me as an individual	2.83	
A variety of teaching activities were used	2.31	
Overall Course Evaluation	2.86	.47
Overall course quality	2.89	
My satisfaction with the quality of the instruction	2.92	
Method(s) used to determine my grade was appropriate	2.95	
Course expectations were clear	2.78	
Course objectives were clear	3.01	
Instructor is concerned about my progress in class	2.79	
I clearly understood the information presented in the course	2.65	

Note. Scale: (1) On-campus Courses Much More than Internet Courses, (2) On-campus Courses Somewhat More than Internet Courses, (3) No difference between On-campus and Internet Courses (4) Internet Courses Somewhat More than On-campus Courses (5) Internet Courses Much More than On-campus Courses.

One of the concerns of the researchers was that students who had completed only one or two on-line courses might not have a realistic perception of distance education classes. If they had experienced a "bad" course and it was the only distance education class they had completed, this might present them with an inaccurate view. Likewise, they could have experienced one outstanding distance education class. In order to get the most accurate assessment of on-line courses, it was decided to compare the views of students who had completed three or fewer Internet classes, with students who had completed four or more classes. Students who had completed four or more on-line courses were identified as "frequent" distance education students, while those who had completed three or fewer classes were identified as "less frequent" distance education students.

Frequent distance education students differed from the less frequent distance education students on three of the seven principles of good teaching and the overall course evaluation as seen in Table 5. In each instance, the frequent student has a more favorable rating toward distance education than did the less frequent student. On the principle "Good Practice Uses Active

Learning Techniques," the mean rating of the frequent student was 2.96 ($SD = .81$) while the less frequent student had a mean rating of 2.64 ($SD = .55$, $t = -2.39$, $p < .05$). While both groups agreed that on-line courses were stronger on the principle that "Good Practice Emphasizes Time on Task," the frequent students mean rating was 3.52 ($SD = .62$) while the less frequent students mean rating was 3.28 ($SD = .54$, $t = -2.11$, $p < .05$). Frequent students rated "Good Practice Respects Diverse Talents and Ways of Learning" higher than did the less frequent students ($M = 2.77$, $SD = .55$ and $M = 2.54$, $SD = .56$ respectively) ($t = 2.07$, $p < .05$). The mean overall course satisfaction for the frequent student was 2.96 ($SD = .53$), while the less frequent student had a mean course satisfaction score of 2.77 ($SD = .39$, $t = -2.06$, $p < .05$).

There was one difference between frequent and less frequent students on factors influencing the decision to enroll in on-line courses. This factor was "Allowed me to continue to work." The frequent students rated this 4.65 ($SD = .80$), while the less frequent students had a mean rating of 4.15 ($SD = 1.09$, $t = -2.65$, $p < .01$).

Table 5
Comparison of "Frequent" and "Less Frequent" Distance Education Students Regarding On-line Courses[a]

Factors Influencing Enrollment Decision	Less Frequent (N=54)		Frequent (N=49)		
	M	*SD*	*M*	*SD*	*t*
The cost of the Internet course	2.57	1.38	2.73	1.45	-.58
I did not have to travel to a campus	4.44	1.08	4.57	.98	-.62
I prefer this approach to learning	2.65	1.03	2.77	1.13	-.57
I like the convenience of learning at the time of my own choosing	3.91	1.17	4.16	1.05	-1.16
The course(s) was (were) available only by distance education	2.65	1.47	2.67	1.42	-.09
I believed that an Internet course would be easier than an on-campus course	1.89	1.14	1.71	1.06	.79
Allowed me to continue to work.	4.15	1.09	4.65	.80	-2.65**
Did not disrupt my family life	3.78	1.27	4.16	1.30	-1.52
Perceptions of Courses According to the Seven Principles	*M*	*SD*	*M*	*SD*	*t*
1. "Good Practice Encourages Contacts Between Students and Faculty"	2.35	.62	2.48	.65	-1.05
2. "Good Practice Develops Reciprocity and Cooperation Among Students"	1.98	.59	2.11	.75	-.95
3. "Good Practice Uses Active Learning Techniques"	2.64	.55	2.96	.81	-2.39*
4. "Good Practice Gives Prompt Feedback"	2.87	.45	2.91	.51	-.43
5. "Good Practice Emphasizes Time on Task"	3.28	.54	3.52	.62	-2.11*
6. "Good Practice Communicates High Expectations"	3.01	.40	3.23	.64	-1.36
7. "Good Practice Respects Diverse Talents and Ways of Learning"	2.54	.56	2.77	.55	-2.07*
Overall Satisfaction:	2.77	.39	2.96	.53	-2.06*

[a]Frequent = 4 or more courses
*p < .05, **p < .01

Conclusions/Recommendations/ Implications

A major factor in students' decisions to enroll in distance education courses was the "convenience" factor. Students do not have to travel long distances (and hunt for a parking space). For some students, the distance to campus is a major prohibiting factor toward furthering their education. On-line courses enable students to complete a degree or teacher certification that would not be possible otherwise. An on-line course also allows students to continue working and does not disrupt their family life. Students believe on-line courses allow them to use their time more efficiently. However, there is a trade off for this convenience.

On-line courses do not compare favorably with on-campus courses in regards to the interaction between students and students and professors. While this conclusion is not unexpected, the professors involved in teaching the on-line courses were mildly surprised by these findings. The professors have worked diligently to implement electronic bulletin boards, e-mail discussion groups, and even on-line team activities to foster interaction. Most classes utilize interactive quizzes. The professors involved in the program respond quickly to e-mail and phone messages from on-line students. Careful monitoring of student course evaluations each semester indicates students are pleased with the amount of interaction in the on-line courses. Yet, this does not seem to replace the actual human contact that is found in on-campus courses. Even students who were frequent users of on-line courses and who have no hesitation in contacting the professors rated on-line courses lower in the interaction arena than the on-campus courses.

Students who had completed four or more distance education courses had ratings that leaned more favorably toward on-line courses than did students who had taken fewer on-line courses. It could be assumed that these students had more varied experiences with on-line courses and thus could more accurately compare on-line and on-campus courses. The more frequent students found that on-campus courses excelled in only two principles—interaction among students and interaction among students and professors. They were also in agreement that on-line courses excelled in the time on task dimension.

Those involved in distance education should make every effort possible to build more interactive components into the course. This should include interaction between and among students and also interaction with the professor. On-line instructors should continue to use chat rooms, bulletin boards, and e-mail listservs. Instructors might also want to investigate using web cams and being in their office at selected times so students could contact them through web cams for both verbal and visual interaction. Additionally, instructors and universities may want to consider using newer technologies such as Macromedia's Breeze Live, which has enhanced interaction features.

On-campus courses were viewed more favorably with regard to the principle "Good Practice Respects Diverse Talents and Ways of Learning." On-line instructors need to be more creative in developing alternative ways to communicate the course content in order to meet the diverse needs of learners. Having on-line readings and a canned Power Point presentation may not be accommodating to all learning styles. The addition of streaming video vignettes, case studies, flash animations or other such devices may help reach different learning styles. On-line instructors should also consider having alternative assignments and different methods of assessing learning.

This research disproved the belief held by some "traditional" professors that distance education courses are easy. The statements "Amount of time I spent on the course," "Academically challenging," and "Amount of work required" all received ratings higher than the mid-point. On-line courses are just as rigorous and demanding as on-campus courses.

This research did not examine the question of how effective distance education courses are in bringing about learning. This has been studied extensively and the findings are consistent that there are no significant differences (Russell, 1999). This department has compared exam scores and final grades of students enrolled in on-line courses and on-campus courses and have found no differences. Faculty have monitored course evaluations and have rarely found a difference between on-line and on-campus courses. Students learn through on-line courses and are satisfied with them. This research identified possible deficiencies in on-line courses and has provided suggestions on how to address these deficiencies.

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