Students' Content Preferences for Taking Online Courses

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Abstract

A survey was conducted to determine university students' course taking preferences in different content areas. Courses that were included in this study were taken from the undergraduate catalog of a university in a large and diverse metropolitan area. More than 35,000 students are currently enrolled in this university that serves students from all over the world, including the Caribbean and Latin American countries. One hundred and thirteen students participated in this study. A convenience sampling method was used to select the study participants. The study did find significant differences between males and females in terms of online course taking preferences. There were also significant differences in course taking preferences, online of face to face, between those who have previously completed one or more courses online and those who have not completed any courses online. The implications of the findings of this study for offering online courses are discussed. Suggestions for conducting future studies are also offered.

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Introduction

A growing number of educational institutions in the United States of America are offering an increasing array of courses and programs at a distance and more and more students are enrolling such courses. For example, it has been reported that more than "3.9 million students were taking at least one online course during the fall 2007 term; a 12% increase over the number reported the previous year (Allen and Seaman, 2008, p.1). This growth trend is likely to continue for at least several more years before student enrollments in online courses and programs begin to level off.

Need and Rationale for the Study

Educational institutions offer distance education courses and programs for several reasons. A study published by the US Department of Education (Parsad and Lewis, 2008) revealed that the following are some of the reasons why post-secondary institutions of education offer education at a distance:

> The most common factors cited as affecting distance education decisions to a major extent were meeting student demand for flexible schedules (68 percent), providing access to college for students who would otherwise not have access (67 percent), making more courses available (46 percent), and seeking to increase student enrollment (45 percent) (p. 3).

It has also been reported that students prefer to take online courses for reasons that include "*financial reasons*," "*flexibility*" and the "ability to do *coursework at home*" (Braun, 2008: p. 69).

While these reasons are worthy in themselves, they do not take into consideration students' content related preferences for taking or not taking online courses. Kochman and Maddux (2001) who studied differences in the grades of students who took courses in campus-based classrooms and those who took courses at a distance via interactive television student outcomes noted

> Course content is another issue. It is possible that the type of content being delivered over interactive televised distance learning affects student outcomes. The differences in student outcomes between the education/science subset and the liberal arts/business subset suggest that this is an area for future investigation.

Sharp and Cox (2003) contend that every course is not appropriate for distance education. It has also been stated that courses in which students, are expected "to develop empathy or other affective orientations may not be suitable" for online delivery (Citation not included to ensure anonymous peer review of the paper and will be included later if the paper is accepted for publication).

However, there is not much research that takes students content area preferences into account while studying different topics related to distance education. As Levy (2009-2010) noted,

> With academic success possibly hinging on the discipline or course material, this is certainly an area of distance learning in need of further research (p. 28).

This study offers a small beginning in the attempt to fill such a gap in the large body of research on various aspects of distance learning.

Purpose of the Study and Research Questions

The purpose of the study is to explore if students prefer to complete courses in certain subject areas in traditional face to face settings or partially online, or fully online. Colleges, universities and other postsecondary institutions of higher learning can use the findings of this study to make informed decisions about offering online courses.

Educational institutions can offer more online sections of courses and degree programs in the content areas that students prefer to take online. They can similarly plan to offer more courses and programs face to face in those subject areas that students reportedly prefer to take courses in traditional classroom settings. Such informed planning of course and program offerings will help educational institutions better meet the needs of their students.

This study seeks to answer the following four research questions:

1. What is the relationship between the content area of the course and students' preferences for taking the course fully online, partially online or completely face to face?

2. What is the relationship between students' ethnicity and preference for taking courses in different content areas fully online, partially online or completely face to face?

3. What is the relationship between students' sex and preference for taking courses in different content areas fully online, partially online or completely face to face?

4. What is the relationship between students' prior experience or lack thereof with online courses and preference for taking courses in different content areas fully online, partially online or completely face to face?

Methods

Data Collection

A survey was developed, and administered to 113 students who were enrolled undergraduate and graduate courses in a large, publicly funded research university that is located in the southeastern part of the United States of America. The survey instrument was first pilot tested with students in a graduate level educational research course. The students in the graduate course were asked to complete the survey and identify potential problems in the survey. The survey was modified

based on the feedback provided by these students before it was administered to the larger group of 113 participants. Students who participated in the pilot phase of the study were not included in the larger study.

The names of courses included in the survey, in order to determine students' preferences for taking them fully online, partially online or face to face, were taken directly from the undergraduate catalog of the university where the study was conducted.

Approval to conduct research involving human subjects was obtained from the Institutional Review Board (IRB) at the university. The survey was administered in classes taught at the university. Faculty who taught undergraduate and graduate courses, were contacted and permission requested to administer the survey to their students during class time. The surveys were then administered to students enrolled in those classes whose instructors granted permission to the researchers to collect data. A verbal consent statement that was approved by the IRB was read before the start of each data collection session. The participants were not compensated or rewarded in any way by the researchers.

Description of the Sample

More than sixty-seven percent of the study participants were females (67.3%), while 32.7% of the subjects were males. Of the 113 students who participated in the study, 37 were males and 76 were females.

Sixty-seven percent of those who participated in the study were of Hispanic origin, as shown in Table 1. This is not surprising because the university in which the study was conducted is considered to be a "Hispanic Serving Institution" according to Federal Government guidelines. Almost all Latin American countries are represented in the student body, and the diversity of students enrolled in courses and programs in the university can be attributed to the ethnic diversity that exists in the large city in which the university is located.

Table 1
Distribution of the sample of participants by ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Asian	5	4.4	4.5	4.5
	Black or African American	16	14.2	14.3	18.8
	Hispanic	75	66.4	67.0	85.7
	White	16	14.2	14.3	100.0
	Total	112	99.1	100.0	
Missing	System	1	.9		
Total		113	100.0		

The sample also consisted of 39 or 35.8% of students who had not taken any courses online and 70 or 64.2% percent of students who had taken one or more courses online. Data, as shown in Table 2, were missing for four students (3.5%).

Table 2
Distribution of the sample by number of online classes completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	39	34.5	35.8	35.8
	1	70	61.9	64.2	100.0
	Total	109	96.5	100.0	
Missing	System	4	3.5		
Total		113	100.0		

Data Analysis, Findings, and Discussion of Findings

A majority of the students who participated in this study were of Hispanic origin. The numbers of Caucasian and African American students who participated in the study were comparatively smaller. Therefore, it should be acknowledged at the outset that the findings of this study could be limited to the population of Hispanic students and the results may or may not be generalizable to the entire population of college and university students.

The findings of this study are many and they will be described and discussed while answering each of the four research questions that were previously mentioned. Some of the findings may have to be accepted with caution especially in instances where the expected cell count is less than five.

1. What is the relationship between the content area of the course and students' preferences for taking the course fully online, partially online or completely face to face?

The answer to the above research question is a resounding "yes." There is certainly a relationship between the content areas of the courses and preferences for taking the courses. Frequencies were initially obtained to determine the numbers and percentages of students who prefer taking certain content courses fully online, partially online, or in the traditional face to face format. An overwhelming majority of more than 80% of the students who participated in this survey indicated (see Table 3) that they prefer to take calculus (n=99, 87.6%), statistics (n=93, 82.3%), trigonometry (n=93, 82.3%), and physics (n=92, 81.4%) courses in face to face settings.

Between 75.2% and 79.6% of the students reported (see Table 4) that they prefer to take courses in content areas such as accounting (n=90, 79.6%), finite math (n=89, 78.8%), chemistry (n=87, 77.0%), and finance (n=85, 75.2%) in face to face settings. A majority of the students also preferred to take biology (n=77, 68.1%), economics (n=71, 62.8%), and performing arts (n=70, 61.9%) courses in traditional face to face settings as well.

Other content area courses that were considered suitable for online delivery modes were marketing (n=55, 48.7%), fine arts (n=54,47.8%), anthropology (n=52, 46.0%), English Composition (n=48, 42.5%), politics (n=46, 40.7%), psychology (n=46, 40.7%), art history (n=45, 39.8%), computer science (n=44, 38.9%), geography (n=44, 38.9%) and human growth and development (n=43, 38.1%), as shown in table 5.

Table 3
Content area courses that more than eighty percent of the students prefer to take face to face

Course Taking Preference	Course Content Areas (Sample Size: N =113)				
	Accounting	Calculus	Physics	Statistics	Trigonometry
Fully Online	11 (9.8%)	5 (4.5%)	10 (8.8%)	7 (6.3%)	9 (8.0%)
Partially Online	11 (9.8%)	8 (7.1%)	11 (9.7%)	12 (10.7%)	10 (8.9%)
Face to face	90 (80.4%)	99 (88.4%)	92 (81.4%)	93 (83.0%)	93 (83.0%)
Missing Data	1	1	0	1	1

Table 4
Content area courses that between seventy and seventy nine percent of the students prefer to take face to face

Course Taking Preference	Course Content Areas (Sample Size: N =113)		
	Chemistry	Finance	Finite Math
Fully Online	8 (7.2%)	11 (9.8%)	9 (8.0%)
Partially Online	16 (14.4%)	16 (14.3%)	14 (12.5%)
Face to face	87 (78.4%)	85 (75.9%)	89 (79.5%)
Missing Data	2	1	1

Table 5
Content area courses that between sixty and sixty nine percent of the students prefer to take face to face

Course Taking Preference	Course Content Areas (Sample Size: N =113)		
	Biology	Economics	Performing Arts
Fully Online	19 (17.0%)	17 (15.0%)	21 (19.3%)
Partially Online	16 (14.3%)	25 (22.1%)	18 (16.5%)
Face to face	77 (68.7%)	71 (62.8%)	70 (64.2%)
Missing Data	1	0	4

Table 6
Other content area courses that students prefer to take face to face

Course Taking Preference	Course Content Areas (Sample Size: N =113)				
	Anthropology	Computer Science	English Composition	Fine Arts	Geography
Fully Online	32 (28.8%)	27 (24.3%)	38 (33.9%)	37 (32.7%)	38 (34.5%)
Partially Online	27 (24.3%)	40 (36.0%)	26 (23.2%)	22 (19.5%)	28 (25.5%)
Face to face	52 (46/.8%)	44 (39.6%)	48 (42.9%)	54 (47.8%)	44 (50.0%)
Missing Data	2	2	1	0	3

The data collected for this study shows that relatively smaller majorities of students (see Table 6) reportedly preferred to take courses in civilization (n=50, 44.2%), earth science (n=40, 35.4%), history (n=41, 36.3%), religion (n=41, 36.3%), and sociology (n=43, 38.1%) fully online.

It has been widely reported that students have "math anxiety" (Betz, 1978; Perry, 2004; Tobias, 1993), "science anxiety" (Brownlow, Jacobi, and Rogers, 2000; Mallow, 1994; Mallow, Jeffry, Kastrup, Helge, Bryant, Fred B., Hislop, Nelda, Shefner, Rachel, and Udo, Maria, 2010; and Udo, Ramsey, and Mallow, 2004), and such anxiety could make them avoid taking courses in these content areas. Another well researched topic is "computer anxiety" (Anderson, 1996; Beckers and Schmidt, 2001; Chua, Chen, and Wong, 1999; and Igbaria, and Chakrabarti, 1990). The prevalence of "statistics anxiety" has also been reported in the literature (Zeidner, 1991).

Based on the data obtained for this study, and keeping the literature on computers, math, science and statistics anxieties in mind, it can be construed that students reportedly preferred to take courses that contain science and /or math content in traditional classroom settings rather than at a distance. The data can also be interpreted to suggest that students reportedly preferred subject area courses that are generally considered to be difficult, such as calculus, physics, chemistry trigonometry, accounting, finite math, and finance, as suitable for offering in face to face settings.

2. What is the relationship between students' ethnicity and preference for taking courses in different content areas fully online, partially online or completely face to face?

Results of cross tabulations and Chi-Square tests showed that there were no significant differences at the p= <= .05 level between students' ethnicity and their preferences for taking courses online, face-to face or partially online.

There were significant differences in two content area courses at probability levels that were slightly above the threshold level of p <= .05 that was previously determined as being the acceptable threshold for determining if differences were statistically significant. These two course content areas were Earth Science, Chi-Square 5.385, df = 2, 2-sided significance p = .068, and Human Growth & Development, Chi-Square 5.135, df = 2, 2-sided significance p = .077. In both instances, greater proportions of Hispanic students preferred to take the courses fully online.

3. What is the relationship between students' sex and preference for taking courses in different content areas fully online, partially online or completely face to face?

Sex related differences in course taking preferences were observed in the five content areas of art history, fine arts, marketing, performing arts and psychology. Results of cross tabulations shown in Tables 7, 8, 9, 10, and 11 provide evidence regarding differences in course taking preferences between males and females.

Data in Table 7 shows that a large proportion of females reportedly preferred to take art history courses in face to face settings. A smaller proportion of females reportedly preferred to take the course partially online. Similar results were obtained in the content areas of fine arts, marketing, and performing arts. In the content area of psychology, larger proportions of female students

reportedly preferred to take the course partially online, while a smaller proportion preferred to take the course face to face. These findings are shown in Tables 8, 9, 10, and 11.

Table 7
Crosstab and Pearson Chi Square: Sex by course taking preference – Art History

Sex	Counts	Course Content Area: **Art History**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	21	4	11	36
	Expected Count	14.3	7.1	14.6	36.0
	% of Total	18.9%	3.6%	9.9%	32.4%
Female	Count	23	18	34	75
	Expected Count	29.7	14.9	30.4	75.0
	% of Total	20.7%	16.2%	30.6%	67.6%
Total	Count	44	22	45	111
	Expected Count	44.0	22.0	45.0	111.0
	% of Total	39.6%	19.8%	40.5%	100%
Pearson Chi Square value = 8.046, df = 2, p = .018 (2-sided significance)					

Table 8
Crosstab and Pearson Chi Square: Sex by course taking preference – Fine Arts

Sex	Counts	Course Content Area: **Fine Arts**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	19	6	12	37
	Expected Count	12.1	7.2	17.7	37.0
	% of Total	16.8%	5.3%	10.8%	32.7%
Female	Count	18	16	42	76
	Expected Count	24.9	14.8	36.3	76.0
	% of Total	15.9%	14.2%	37.2%	67.3%
Total	Count	37	22	54	113
	Expected Count	37.0	22.0	54.0	113.0
	% of Total	32.7%	19.5%	47.8%	100%
Pearson Chi Square value = 8.831, df = 2, p = .012 (2-sided significance)					

Table 9
Crosstab and Pearson Chi Square: Sex by course taking preference – Marketing

Sex	Counts	Course Content Area: **Marketing**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	14	8	14	36
	Expected Count	7.8	10.4	17.8	36.0
	% of Total	12.6%	7.2%	12.6%	32.4%
Female	Count	10	24	41	75
	Expected Count	16.2	21.6	37.2	75.0
	% of Total	9.0%	21.6%	36.9%	67.6%
Total	Count	24	32	55	111
	Expected Count	24.0	32.0	55.0	111.0
	% of Total	21.6%	28.8%	49.5%	100.0%
Pearson Chi Square value = 9.376, df = 2, p = .009 (2-sided significance)					

Table 10
Crosstab and Pearson Chi Square: Sex by course taking preference – Performing Arts

Sex	Counts	Course Content Area: **Performing Arts**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	13	5	17	35
	Expected Count	6.7	5.8	22.5	35.0
	% of Total	11.9%	4.6%	15.6%	32.1%
Female	Count	8	13	53	74
	Expected Count	14.3	12.2	47.5	74.0
	% of Total	7.3%	11.9%	48.6%	67.9%
Total	Count	21	18	70	109
	Expected Count	21.0	18.0	70.0	109.0
	% of Total	19.3%	16.5%	64.2%	100.0%
Pearson Chi Square value = 10.672, df = 2, p = .005 (2-sided significance)					

Table 11
Crosstab and Pearson Chi Square: Sex by course taking preference – Psychology

Sex	Counts	Course Content Area: **Psychology**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	17	6	14	37
	Expected Count	9.3	12.6	15.2	37.0
	% of Total	15.2%	5.4%	12.5%	33.0%
Female	Count	11	32	32	75
	Expected Count	18.8	25.4	30.8	75.0
	% of Total	9.8%	28.6%	28.6%	67.0%
Total	Count	28	38	46	113
	Expected Count	28.0	38.0	46.0	112.0
	% of Total	25.0%	33.9%	41.1%	100%
Pearson Chi Square value = 14.946, df = 2, p = .001 (2-sided significance)					

Students' gender does seem to play a role in their course taking preferences in different content areas. The findings of this study are somewhat consistent with Wang and Jong's (2008) assertion that the women enrolled in computer literacy courses who participated in their study did not prefer distance education courses. However, Sullivan (2001) has found that online education does benefit female students who are older. This study found that there were differences between men and women in their course taking preferences in five content areas, none of which were computer literacy courses. Such differences in preferences could also exist in other content area courses that were not included in this study.

4. What is the relationship between students' prior experience or lack thereof with online courses and preference for taking courses in different content areas fully online, partially online or completely face to face?

Previous research has shown that students who have prior experience with the technology are likely to be successful in online education (Harris and Gibson, 2006; Kishore, Tabrizi, Ozan, Aziz, and Wuensch, 2009; and Volery, 2001). Prior knowledge of the course content material has also been shown to be positively linked to online course taking decisions (Tabatabaei, Manouchehr, Schrottner, Bea, and Reichgelt, Han. (2006)).

Students who had prior online course taking experience reported that they would take courses in the ten content areas of civilization, earth science, English composition, fine arts, geography, human growth & development, marketing, psychology, religion, and sociology fully online. These are typically courses in which not much mathematics content is covered. This could be a reason why students who have taken one or more online courses reportedly preferred to take these courses online. Data for the civilization course is shown in Table 12. Data tables 17-25 for the courses earth science, English composition, fine arts, geography, human growth & development, marketing, psychology, religion, and sociology, are shown in Appendix A.

In the case of biology, it is clear that a significantly large proportion of students preferred to take the course partially online. This is shown in Table 13. The rest of the students were divided in their course taking preference, with a slightly larger proportion of students reporting that they preferred to take biology courses face to face than fully online. It can be interpreted that a statistically significant proportion of the students preferred to take biology courses partially online, the second choice being taking the course face to face. The last choice was taking the course fully online. A biology course is also a science course. However, more students typically pass biology courses at higher rates than students who pass courses in chemistry and physics. For example, Abudayyeh (2008) reports that at the Massachusetts Institute of Technology (MIT)

> The Class of 2012's performance on the advanced standing exams (ASEs) was markedly different from last year's as freshman performed better on the biology exams but poorer on the physics exams.
> . . .
> The chemistry ASE, one of the harder ASEs because of its coverage of topics that extend beyond high school curriculum, again had the lowest passing rate among all the advanced standing exams, as only 7 out of the 100 students who took the exam passed.

Table 12
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Civilization

Number of Online Courses Taken	Counts	Course Content Area: **Civilization**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	12	10	17	39
	Expected Count	17.3	10.4	11.4	39.0
	% of Total	10.6%	8.8%	15.0%	34.5%
One or More Courses Taken Online	Count	38	20	16	74
	Expected Count	32.7	19.6	21.6	74.0
	% of Total	33.6%	17.7%	14.2%	65.5%
Total	Count	50	30	33	113
	Expected Count	50.0	30.0	33.0	113.0
	% of Total	44.2%	26.5%	29.2%	100.0 %

Pearson Chi Square value = 6.684, df = 2, p = .035 (2-sided significance)

Table 13
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Biology

Number of Online Courses Taken	Counts	Course Content Area: **Biology**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	5	0	33	38
	Expected Count	6.4	5.4	26.1	38.0
	% of Total	4.5%	0%	29.5%	33.9%
One or More Courses Taken Online	Count	14	16	44	74
	Expected Count	12.6	10.6	50.9	74.0
	% of Total	12.5%	14.3%	39.3%	66.1%
Total	Count	19	16	77	112
	Expected Count	19.0	16.0	77.0	112.0
	% of Total	17.0%	14.3%	68.8%	100%
Pearson Chi Square value = 11.446, df = 2, p = .003 (2-sided significance)					

The data shows that significantly larger proportions of students preferred to take courses such as chemistry, finance, and statistics in face to face settings. The data for the course content area of chemistry is shown in Table 14. Sizeable, but smaller proportions of students also indicated they would take the courses in partially online formats. The data for courses in the content areas of finance and statistics (Table 26 and Table 27) are shown in Appendix B.

As far as the two content areas of computer science and politics are concerned, significantly greater proportions of students preferred to take the courses partially online, as shown in Table 15 and Table 16. As the data in the two tables show, lesser proportions of students preferred to take the courses fully online.

Table 14
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Chemistry

Number of Online Courses Taken	Counts	Course Content Area: **Chemistry**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	4	0	34	38
	Expected Count	2.7	5.5	29.8	38.0
	% of Total	3.6%	.0%	30.6%	33.9%
One or More Courses Taken Online	Count	4	16	53	74
	Expected Count	5.3	10.5	57.2	74.0
	% of Total	3.6%	14.4%	47.7%	66.1%
Total	Count	8	16	87	112
	Expected Count	8.0	16.0	87.0	112.0
	% of Total	7.2%	14.4%	78.4%	100%
Pearson Chi Square value = 10.120, df = 2, p = .006 (2-sided significance)					

Table 15
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Computer Science

Number of Online Courses Taken	Counts	Course Content Area: **Computer Science**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	7	9	22	38
	Expected Count	9.2	13.7	15.1	38.0
	% of Total	6.3%	8.1%	19.8%	34.2%
One or More Courses Taken Online	Count	20	31	22	73
	Expected Count	17.8	26.3	28.9	73.0
	% of Total	18.0%	27.9%	19.8%	65.8%
Total	Count	27	40	44	111
	Expected Count	27.0	40.0	44.0	111.0
	% of Total	24.3%	36.0%	39.6%	100.0%
Pearson Chi Square value = 8.132, df = 2, p = .017 (2-sided significance)					

Table 16 Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Politics					
Number of Online Courses Taken	Counts	Course Content Area: **Politics**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	8	8	22	38
	Expected Count	10.2	12.2	15.6	38.0
	% of Total	7.1%	7.1%	19.6%	33.9%
One or More Courses Taken Online	Count	22	28	24	74
	Expected Count	19.8	23.8	30.4	74.0
	% of Total	19.6%	25.0%	21.4%	66.1%
Total	Count	30	36	46	112
	Expected Count	30.0	36.0	46.0	112.0
	% of Total	26.8%	32.1%	41.1%	100.0%
Pearson Chi Square value = 6.870, df = 2, p = .032 (2-sided significance)					

In the case of the content area of trigonometry, the Chi Square value of 5.971 was significant at the p=.051 level, which is just above the threshold level of p=.05 that was considered the cutoff point for purposes of this study. An overwhelmingly large proportion of students reported that they preferred to take trigonometry courses the traditional, face to face way.

Conclusion

The study found that there are differences between males and females in terms of the courses that they prefer to take online. Similar studies should be conducted to replicate the findings of this study using a larger number of courses. Future studies can also focus on different content courses within the same broad subject area. For example, future studies can look for differences in course taking preferences in the different areas of mathematics, by including courses such as algebra, geometry, calculus, and trigonometry and courses in other topic areas that fall under the broad umbrella of mathematics.

Results of this study have also shown that there are indeed significant differences is course taking preferences between students who have prior experience with online courses, and have taken at least one or more courses online, and those who have not taken any courses online. In many instances, it is true that prior experience is a predictor of future experience and success. Distance learning is no exception.

This study has certainly added to a relatively sparse knowledge base regarding online course taking preferences of students in different content areas. The findings of this study also have policy implications for colleges and universities. Educational institutions offering distance education courses can develop policies and procedures to screen students who wish to take online courses based on their subject area preferences, their prior online course-taking experience, and other factors that have been reported by other researchers, such as maturity and self-efficacy, to name two.

The findings of this study, which need to be replicated, using broader and larger samples of participants drawn from diverse ethnic backgrounds, varying age levels, different educational levels, and different cultures, can provide a basis for colleges and universities to better meet the online learning needs of its students, and at the same time also make more efficient and effective uses of ever shrinking resources.

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Appendix A

Data tables for courses that students reportedly prefer to complete fully online.

Table 17
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Earth Science

Number of Online Courses Taken	Counts	Course Content Area: **Earth Science**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	9	8	22	39
	Expected Count	13.9	12.5	12.5	39.0
	% of Total	8.0%	7.1%	19.6%	34.8%
One or More Courses Taken Online	Count	31	28	14	73
	Expected Count	26.1	23.5	23.5	73.0
	% of Total	27.7%	25.0%	12.5%	65.2%
Total	Count	40	36	36	112
	Expected Count	40.0	36.0	36.0	112.0
	% of Total	35.7%	32.1%	32.1%	100.0%
Pearson Chi Square value =16.156, df = 2, p = .000 (2-sided significance)					

Data tables for courses that students reportedly prefer to complete fully online.

Table 18
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – English Composition

Number of Online Courses Taken	Counts	Course Content Area: **English Composition**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	5	10	24	39
	Expected Count	13.2	9.1	16.7	39.0
	% of Total	4.5%	8.9%	21.4%	34.8%
One or More Courses Taken Online	Count	33	16	24	73
	Expected Count	24.8	16.9	31.3	73.0
	% of Total	29.5%	14.3%	21.4%	65.2%
Total	Count	38	26	48	112
	Expected Count	38.0	26.0	48.0	112.0
	% of Total	33.9%	23.2%	42.9%	100.0%
Pearson Chi Square value = 12.882, df = 2, p = .002 (2-sided significance)					

Appendix A (Continued)

Data tables for courses that students reportedly prefer to complete fully online.

Table 19
Crosstab and Pearson Chi Square: Sex by course taking preference – Fine Arts

Sex	Counts	Course Content Area: **Fine Arts**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	19	6	12	37
	Expected Count	12.1	7.2	17.7	37.0
	% of Total	16.8%	5.3%	10.8%	32.7%
Female	Count	18	16	42	76
	Expected Count	24.9	14.8	36.3	76.0
	% of Total	15.9%	14.2%	37.2%	67.3%
Total	Count	37	22	54	113
	Expected Count	37.0	22.0	54.0	113.0
	% of Total	32.7%	19.5%	47.8%	100%
Pearson Chi Square value = 8.831, df = 2, p = .012 (2-sided significance)					

Data tables for courses that students reportedly prefer to complete fully online.

Table 20
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Geography

Number of Online Courses Taken	Counts	Course Content Area: **Geography**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	7	10	20	37
	Expected Count	12.8	9.4	14.8	37.0
	% of Total	6.4%	9.1%	18.2%	33.6%
One or More Courses Taken Online	Count	31	18	24	73
	Expected Count	25.2	18.6	29.2	73.0
	% of Total	28.2%	16.4%	21.8%	66.4%
Total	Count	38	28	44	110
	Expected Count	38.0	28.0	44.0	110.0
	% of Total	34.5%	25.5%	40.0%	100.0%
Pearson Chi Square value = 6.748, df = 2, p = .034 (2-sided significance)					

Appendix A (Continued)

Data tables for courses that students reportedly prefer to complete fully online.

Table 21
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Human Growth & Development

Number of Online Courses Taken	Counts	Course Content Area: **Human Growth & Development**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	7	8	23	38
	Expected Count	12.6	10.9	14.6	38.0
	% of Total	6.3%	7.1%	20.5%	33.9%
One or More Courses Taken Online	Count	30	24	20	74
	Expected Count	24.4	21.1	28.4	74.0
	% of Total	26.8%	21.4%	17.9%	66.1%
Total	Count	37	32	43	112
	Expected Count	37.0	32.0	43.0	112.0
	% of Total	33.0%	28.6%	38.4%	100.0%
Pearson Chi Square value = 12.195, df = 2, p = .002 (2-sided significance)					

Data tables for courses that students reportedly prefer to complete fully online.

Table 22
Crosstab and Pearson Chi Square: Sex by course taking preference – Marketing

Sex	Counts	Course Content Area: **Marketing**			Total
		Fully Online	Partially Online	Face to Face	
Male	Count	14	8	14	36
	Expected Count	7.8	10.4	17.8	36.0
	% of Total	12.6%	7.2%	12.6%	32.4%
Female	Count	10	24	41	75
	Expected Count	16.2	21.6	37.2	75.0
	% of Total	9.0%	21.6%	36.9%	67.6%
Total	Count	24	32	55	111
	Expected Count	24.0	32.0	55.0	111.0
	% of Total	21.6%	28.8%	49.5%	100.0%
Pearson Chi Square value = 9.376, df = 2, p = .009 (2-sided significance)					

Appendix A (Continued)

Data tables for courses that students reportedly prefer to complete fully online.

Table 23
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Psychology

Number of Online Courses Taken	Counts	Course Content Area: **Psychology**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	5	11	22	38
	Expected Count	9.5	12.9	15.6	38.0
	% of Total	4.5%	9.8%	19.6%	33.9%
One or More Courses Taken Online	Count	23	27	24	74
	Expected Count	18.5	25.1	30.4	74.0
	% of Total	20.5%	24.1%	21.4%	66.1%
Total	Count	28	38	46	112
	Expected Count	28.0	38.0	46.0	112.0
	% of Total	25.0%	33.9%	41.1%	100.0%
Pearson Chi Square value = 7.610, df = 2, p = .022 (2-sided significance)					

Data tables for courses that students reportedly prefer to complete fully online.

Table 24
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Religion

Number of Online Courses Taken	Counts	Course Content Area: **Religion**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	11	7	21	39
	Expected Count	14.5	11.3	13.1	39.0
	% of Total	10.0%	6.4%	19.1%	35.5%
One or More Courses Taken Online	Count	30	25	16	71
	Expected Count	26.5	20.7	23.9	71.0
	% of Total	27.3%	22.7%	14.5%	64.5%
Total	Count	41	32	37	110
	Expected Count	41.0	32.0	37.0	110.0
	% of Total	37.3%	29.1%	33.6%	100.0%
Pearson Chi Square value = 11.248, df = 2, p = .004 (2-sided significance)					

Appendix A (Continued)

Data tables for courses that students reportedly prefer to complete fully online.

Table 25
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Sociology

Number of Online Courses Taken	Counts	Course Content Area: **Sociology**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	9	10	20	39
	Expected Count	15.2	10.6	13.1	39.0
	% of Total	8.2%	9.1%	18.2%	35.5%
One or More Courses Taken Online	Count	34	20	17	71
	Expected Count	27.8	19.4	23.9	71.0
	% of Total	30.9%	18.2%	15.5%	64.5%
Total	Count	43	30	37	110
	Expected Count	43.0	30.0	37.0	110.0
	% of Total	30.1%	27.3%	33.6%	100.0%
Pearson Chi Square value = 9.616, df = 2, p = .008 (2-sided significance)					

Appendix B

Data tables for courses that students reportedly prefer to complete fully online.

Table 26
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Finance

Number of Online Courses Taken	Counts	Course Content Area: **Finance**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	5	1	33	39
	Expected Count	3.8	5.6	29.6	39.0
	% of Total	4.5%	0.9%	29.5%	34.8%
One or More Courses Taken Online	Count	6	15	52	73
	Expected Count	7.2	10.4	55.4	73.0
	% of Total	5.4%	13.4%	46.4%	65.2%
Total	Count	11	16	85	112
	Expected Count	11.0	16.0	85.0	112.0
	% of Total	9.8%	14.3%	75.9%	100%
Pearson Chi Square value = 6.903, df = 2, p = .032 (2-sided significance)					

Data tables for courses that students reportedly prefer to complete fully online.

Table 27
Crosstab and Pearson Chi Square: Number of online courses taken by course taking preference – Statistics

Number of Online Courses Taken	Counts	Course Content Area: **Statistics**			Total
		Fully Online	Partially Online	Face to Face	
Zero Courses Taken Online	Count	1	0	38	39
	Expected Count	2.4	4.2	32.4	39.0
	% of Total	0.9%	0%	33.9%	34.8%
One or More Courses Taken Online	Count	6	12	55	73
	Expected Count	4.6	7.8	60.6	73.0
	% of Total	5.4%	10.7%	49.1%	65.2%
Total	Count	7	12	93	112
	Expected Count	7.0	12.0	93.0	112.0
	% of Total	6.3%	10.7%	83.0%	100.0%
Pearson Chi Square value = 9.206, df = 2, p = .010 (2-sided significance)					