Predictors of student preference for online courses

Louis Charles Glover, EdD
The University of Tennessee at Martin

Veronica Evans Lewis, PhD
The University of Louisiana at Monroe

Abstract

Online education has increased significantly in recent years. However, a comprehensive examination of factors that predict who will take online courses has not been located. This study explored demographic and opinion influences on preferences regarding current and future online courses for 152 college student participants. Results indicate that students who expressed a desire for more online courses at their university tended to prefer online courses. Additionally, the greatest number of online courses were taken by females who: are older than 20 years of age; work 40 hours or more per week; express preference for online or blended courses; consider online courses to be equivalent in difficulty to other course formats; and, express desire for more online course offerings at their university. As such, when marketing online courses, university personnel would be wise to target these groups and focus on the question of whether members of these groups desired more online course offerings at their universities.

Key Words: online courses, face-to-face courses

Introduction

In recent years, online education in university settings has increased significantly for both undergraduate (Allen & Seaman, 2007; Palloff & Pratt, 2001; Waits & Lewis, 2003) and graduate (Karber, 2003; Lyons, 2004) levels. Although large public educational institutions are more likely to offer online education than small private institutions (Allen & Seaman, 2006), approximately 29% of all college students in the United States are enrolled in one or more online courses (Farkas, 2011). Online education is critical to the long-term strategy of an institution (Lytle, 2011) as a result of student demands, issues of access to campus-based courses, and enrollment concerns (Farkas, 2011). Jenkins (2011) indicated that colleges and universities are offering more online courses because they can provide online courses much more cheaply than traditional courses while charging roughly the same tuition for both types. Due to increasingly positive perceptions regarding the effectiveness and relevance of online courses (Ulmer, Watson, & Derby, 2007) methods for offering a diversity of online course content are being explored (Menon & Rubin, 2011).

Students tend toward taking online courses due to the flexibility of scheduling (Angiello, 2010; Coyner & McCann, 2004; Reynold, 2012), employment and family obligations (Karber, 2003; Lyons, 2004), past experience with online courses (Glover & Lewis, in press), and geographic proximity to degree granting institutions (Deal III, 2002). Some students prefer the anonymity of online classes as well as the increased student interactions that are facilitated by use of discussion board and course forums (Coleman, 2005). According to Harrington and Loffredo (2010), a majority of introverts prefer online classes (perhaps as a result of student anonymity) in comparison to extraverts who tend to prefer face-to-face classes.

In discussing some of the disadvantages to taking online courses Jenkins (2011) identified lower success rates in online courses (50%) as compared to face-to-face classes (70-75%). Bejerano (2008) and Jain, Jain, and Jain (2011) questioned the appropriateness of using online courses for all course types and academic disciplines. Glover and Lewis (in press) conducted a student survey, which indicated that history, sociology, and computer science courses were best offered online, whereas theoretical mathematics, applied mathematics, and engineering courses were least appropriate for the online format.

Online courses have been criticized on the basis of issues regarding cultural effectiveness (Lee, 2009), difficulty in addressing differences in student learning styles (Gallagher-Lepak, Reilly, & Killion, 2009), lack of a collaborative instructional environment (Kurth, 2012), and the need for a level of student maturity that often is not found in young college students (Brown, 2011). Many online courses are content heavy and require completion of more assignments than are required in face-to-face courses (Deal III, 2002; Dykman & Davis, 2008; Jock, 2010) perhaps because of concern for the level of rigor associated with online instruction (Buck, 2001, Federal Trade Commission, 2006)

A minimal level of technical competence is necessary for completion of online courses (Jenkins, 2011). The assumption that the current generation of students is technologically sophisticated is not necessarily true (Muilenburg & Berge, 2005) and may especially be inaccurate for low income, disadvantaged, and older students (Brown, 2011) who either are not computer literate or do not have personal computers (Davis, 2011).

Online courses require student self-discipline (Allen & Seaman, 2006). However, lack of motivation and self-discipline are problems identified in today's students (Taylor, 2003). As a

result, administrators in some educational settings advise students of the need for self-

motivation, problem solving abilities, and time management skills in order to successfully

complete online courses (Are online classes for you, 2008). Despite the fact that some software

companies now market products designed to assess whether students can handle the demands of

the online environment, few schools pre-screen online courses to determine which students have

the best chance of success (Fertig, 2012) in this course format.

Much research relative to the general topic of online education concerns faculty

preferences for teaching online courses (Farkas, 2011), student preferences for taking courses

online rather than in traditional settings (Fillion, Limayem, Laferriere, & Mantha, 2009; Glover

& Lewis, in press; Harrington & Loffredo, 2010; Why do students like online learning, 2005),

and problems associated with the rapid growth of online course offerings (Bejerano, 2008;

Brown, 2011; Jain et al., 2012; Kurth, 2012). However, a comprehensive examination of factors

that predict student preference for online courses has not been located. The purpose of the study

was to explore participant demographics and preferences associated with a completion of online

courses and to identify which of those demographic variables best predict which students will

take additional online courses. Colleges, universities, and other secondary institutions of higher

learning can use the findings of this study to make informed decisions about proposed changes to

their online course offerings and the audience to which these courses might best be marketed.

Method

Participants

College students from three universities in the southeast participated in this research

study. The majority of the 152 participants was female ($\underline{n} = 106$, 69.7%), between 20 and 29

years of age ($\underline{n} = 64$, 42.1%), and identified themselves as living in rural areas ($\underline{n} = 62$, 40.3%).

Most participants were full time undergraduate students working toward a degree ($\underline{n}$ = 97, 63.8%) and indicated that they worked between 1 and 39 hours per week ($\underline{n}$ = 58, 38.2%).

Instrument

Data obtained from a survey developed and used by Glover and Lewis (in press) for a previous study was used in the current study. The survey contained five demographic questions and nine questions that assessed participants' preferences and opinions regarding online courses. Nine demographic and opinion variables were used in the current study. These variables included the participant's geographic location (i.e., rural, suburban, urban), gender, age, educational status (i.e., level of current enrollment in college), work status, course-type preference (i.e., online vs. face-to-face), desire for more online courses, need for faculty training to teach online courses, and comparative course difficulty for online versus face-to-face courses. Examples of responses to questions in the survey that were not used in the current study included open ended reasons for course preference and indications of which courses could best and least be offered online.

Procedure

After the authors gained Institutional Review Board approval, data from the previously used survey were accessed. In that survey process, course instructors from the three participating institutions using email and course management systems solicited participation. Potential participants were directed to access the survey via surveymonkey.com. A consent statement was included in the initial correspondence and also was provided on the initial page of the survey. The consent statement described the purpose of the study and participants' rights. Completion of

the survey was voluntary, and no incentives were offered for participation. Personally

identifying information was neither collected nor reported for participants.

The authors of this study had to assume that participants gave honest answers to all

questions, only completed the survey once, and were either currently enrolled or had recently

been enrolled in college. The consent statement also indicated that the survey should not be

completed by anyone under the age of 18, and the authors had to assume that participants

adhered to that requirement as well.

Results

Four opinion variables (i.e., course-type preference, desire for more online courses, need

for faculty training, comparative course difficulty) were initially subjected to Goodness of Fit

chi-square in an effort to determine whether observed response frequencies met expectations.

Significant differences in response frequencies were identified for two of the four variables. For

the desire for more online courses variable, a majority ($\underline{n} = 86$, 57%) of participants indicated a

desire for more online course offerings at their university, $\chi2$ (2, $\underline{N}$=152) = 39.49, p = .00.

Likewise, for the need for faculty training variable, a majority of participants ($\underline{n} = 106$, 70%)

indicated a for faculty training relative to teaching online courses, $\chi2$ (2, $\underline{N}$=152) = 97.32, p =

.00. In contrast, for the course-type preference variable, a relatively equal number of participants

indicated preference for online ($\underline{n} = 53$, 35%) and face-to-face courses ($\underline{n} = 51$, 34%), χ^2 (2,

$\underline{N}$=152) = .250, $\underline{p}$ = .88. Also, for the comparative ease of course completion variable, a

relatively equal number of participants indicated that online courses were either more difficult to

complete ($\underline{n} = 59$, 39%) or about the same level of difficulty ($\underline{n} = 54$, 36%) as face-to-face

courses, χ^2 (2, $\underline{N}$=152) = 4.28, $\underline{p}$ = .12. Table 1 provides a summary of participant responses for

all four opinion variables.

Each of the five demographic geographic (i.e., location, gender, age, educational status, work status) and four opinion (i.e., course-type preference, desire for more online courses, need for faculty training to teach online courses, comparative course difficulty for online versus face-to-face courses) variables were further analyzed using one way analysis of variance (ANOVA) to evaluate whether significant differences existed in the number of online courses taken based on responses provided for categorical options within each variable. Participants had taken an average of 4.28 online courses with 10 or more courses being the most frequently endorsed choice. See Table 2 for a summary of endorsements for number of online courses taken. One-way ANOVA results were mixed with significant differences being identified for three demographic and three opinion variables. Significant differences in the number of online courses taken were identified by age, $\underline{F}$ (4, 151) = 6.55, $\underline{p}$ = .000, η^2 = .151; gender, $\underline{F}$ (1, 151) = 15.93, $\underline{p}$ = .000, η^2 = .096; employment status, $\underline{F}$ (3, 151) = 10.52, $\underline{p}$ = .000, η^2 = .176; desire for more online courses, $\underline{F}$ (2, 151) = 16.71, $\underline{p}$ = .000, η^2 = .184; course-type preference, $\underline{F}$ (2, 151) = 36.89, $\underline{p}$ = .000, η^2 = .33; and, comparative course difficulty, $\underline{F}$ (2, 151) = 5.14, $\underline{p}$ = .007, η^2 = .065. No other significant differences were identified.

Examination of means and post hoc analyses using Tukey identified the following group differences. Participants in the 18-20 age range ($\underline{m}$ = 2.38) took significantly fewer online classes than did members of each of the other age groups. Females ($\underline{m}$ = 4.99) took significantly more online classes than males ($\underline{m}$ = 2.65). Participants who desired to take more online courses ($\underline{m}$ = 5.58) had already taken significantly more online courses than those who either did not desire more online courses ($\underline{m}$ = 2.4) or those who had no opinion on this issue ($\underline{m}$ = 2.71). Participants who preferred taking online courses ($\underline{m}$ = 6.85) had taken significantly more online

courses than participants who preferred face-to-face (m = 2.10) or blended courses (m = 3.77), and participants who preferred blended courses had taken significantly more online courses than participants who preferred face-to-face courses. Participants working 40 or more hours per week (m = 6.86) had taken significantly more online courses than participants from each of the other employment groups (m = 3.72 or less). Participants who indicated that online courses were equivalent in difficulty to face-to-face courses (m = 4.57) had taken significantly more online courses than participants who indicated that online courses were either more (m = 2.60) or less (m = 2.72) difficult than face-to-face courses.

In an effort to determine which individual variable or combination of demographic (i.e., location, gender, age, employment status, educational status, number of online courses previously taken) and opinion (i.e., desire for more online courses, need for faculty training, comparative course difficulty) variables would best predict the grouping variable (i.e., preference for online courses), stepwise discriminant analysis was performed. Two discriminant functions were identified with a combined χ^2 (4) = 96.92, p = .000, Wilkes Lambda = .521. After removal of the first function, the second function failed to provide significant predictive contribution, χ^2 (1) = .13, p = .72, Wilkes Lambda = .99. The canonical correlation for function 1 (desire for more online courses) was good, R_c = .69, and the canonical correlation for function 2 (number of online courses previously taken) was unimpressive, R_c = .03. Function 1 has the greatest predictive ability accounting for 99.9% of the between-group variability, whereas function 2 only accounted for 0.1%. Examination of classification results indicated that 59.2% of all cases were correctly classified with preference breakdowns as follows: Preference for online courses, 40 of 53 cases (75.5%); preference for face-to-face courses, 34 of 51 cases (66.7%); and, preference for blended courses, 16 of 48 cases (33.3%).

Discussion

Many universities include online course offerings as part of their long-term strategic plans (Lytle, 2011). Institutions seeking to address enrollment concerns (Farkas, 2011) and the financial impact of advancing the online course format (Jenkins, 2011) are encouraged to consider marketing online courses as a solution to declining college enrollment. This study explored participant demographics and preferences associated with a completion of online courses and sought to identify which of those demographic variables best predict which students will take additional online courses.

Participants in the current study suggested relatively equal preference for online versus face-to-face courses. However, those participants who preferred online courses had taken, on average, significantly more online courses than participants who preferred face-to-face or blended courses. Similarly, a relatively equal number of current participants suggested that online courses were either more difficult or equal in difficulty to face-to-face courses. This perception could result from the increased workload that often is required in online courses (Deal III, 2002; Dykman & Davis, 2008). A majority (70%) of all participants indicated that faculty who teach online courses should be trained to provide instruction using the online format.

Based on differences in the number of online courses taken by members of each demographic and opinion group, a description of the audience most likely to take online courses was summarized.   According to results of the current study, the targeted audience to whom online courses should be marketed consists of females who: are older than 20 years of age; work 40 hours or more per week; express preference for online or blended courses; consider online

courses to be equivalent in difficulty to other course formats; and, express desire for more online

course offerings at their university.

Results of discriminant analysis confirmed that the best predictor of preference for online

courses was the desire for more online course offerings at the participant's university. Although

a second discriminant function emerged (i.e., number of online courses taken), it proved to

provide minimal contribution (0.1%) to the prediction of preference for online courses.

Examination of classification results indicated that a majority (59.2%) of all preference cases

were correctly classified with preference for online courses maintaining the highest percentage of

correct (75.5%) classifications and preference for blended courses maintaining the lowest

percentage correct (33.3%). As such, when marketing materials to the previously described

groups that are most likely to take online courses, university personnel would be wise to focus on

the question of whether members of those groups desired more online course offerings at their

universities.

There were several limitations associated with this study. Participation in the survey was

limited to students with enrollment histories at three public institutions in the southeast portion of

the United States. As such, results may not reflect the opinions and preferences of college

students in other parts of the country. The format of the survey limited the types of analyses that

could be performed. Therefore, different results might have been derived had the survey

questions been formatted in a different manner. Survey data were collected for only 5 months

during the academic spring semester of 2012. A survey period that included both summer and

fall semesters as well as the spring semester might have resulted in different results.

Recommendations for further study

Because of the increase in online course offerings at universities, continued research into the need for and effectiveness of online education is required. Future studies should continue to examine student and faculty perspectives relative to desires for and satisfaction with online course offerings in order to better clarify the audience to whom these courses should target. A larger and more geographically diverse population that encompasses participants taking courses throughout the academic year should be examined in future studies to increase generalizability of results. Future studies should also focus more readily on collection of data (e.g., Likert scales) that may afford different types of analyses in evaluation of the research questions.

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Appendix A

Table1

Participant Responses to Survey Questions

_____

Question
       Response Options   *N*   *%*
_____

Which best describes your preference?

       taking courses online when available   53   34.9

       taking courses in a face-to-face setting   51   33.6

       taking a blended course that combines elements of both   48   31.6

Would you like to have more online courses offered at your
       institution?

       Yes   86   56.6

       No   25   33.6

       It does not matter to me   48   31.6

Do you feel that faculty should be certified to teach online courses?

       Yes   106   69.7

       No   10   6.6

       It does not matter to me   36   23.7

What is your opinion of online courses?

       They are easier than face to face courses   39   25.7

       They are more difficult than face to face courses   59   38.8

       They are about the same as face-to-face courses   54   35.5

Appendix B

Table 2

Number of Online Courses Previously Taken by Participants

Question Response Options	*N*	*%*
How many online courses have you taken?		
1	14	9.2
2	17	11.2
3	22	14.5
4	12	7.9
5	16	10.5
6	6	3.9
7	5	3.3
8	5	3.3
9	2	1.3
10 or more	28	18.4
None	25	16.4

About the authors

Dr. Louis C. Glover is an assistant professor of education at the University of Tennessee at Martin. His areas of interest include STEM education, mathematics education, science education, online education, at risk students, and factors affecting minority students. Prior to teaching higher education in 2011, he taught secondary chemistry, mathematics, and physics in Louisiana and Texas.

Dr. Veronica Evans Lewis is a professor of psychology at the University of Louisiana at Monroe. Prior to coming to ULM, Dr. Lewis supervised an educational program for school-aged children with disabilities for 2 years, taught high school for 1 year, and served as a practicing school psychologist for 4 years. Her primary research interests are related to minority issues and activities that enhance and detract from the learning of students.