A Preliminary Investigation of Student Perceptions of Online Education

Angela M. Clark
School of Computer and Information Sciences
University of South Alabama
Mobile, Alabama 36688, USA
clark@cis.usouthal.edu

Abstract

It is important that administrators and faculty be cognizant of student perceptions that affect student participation and success in online education. This study was conducted as a preliminary exploration of both on-campus and online students' beliefs and perceptions of online education regarding perceived difficulty, level of effort required, and predicted success in online courses. These beliefs and perceptions along with several other factors directly influence a student's inclination to enroll in an online course. We have found that there are, in fact, differences in perceptions between the two populations of online students and those without previous online course experience. An understanding of these factors which influence these perceptions is important as educational institutions endeavor to attract and retain students to online education programs.

Keywords: online education, distance education, curriculum, student perceptions

1. INTRODUCTION

The explosive growth of the Internet and the World Wide Web as well as state-of-the-art networking and communication technologies have enabled a paradigm shift from institution-centered instruction to *anytime, anywhere, anybody* learning models. This shift towards a *learner-centered paradigm* has enabled Universities and learning centers to reach out to non-traditional students and those that might not have the ability to pursue advanced education due to time and distance limitations. It has been estimated that college revenues from Internet and Intranet courses for 2002 would reach $15 billion (Jones 2000) and that Web-based instruction would account for 46 percent of the education and training market by 2003 (Mottl 2000). Many institutions are offering the same courses both over the Internet and in the traditional brick-and-mortar-based format. This practice allows students to select between the two formats, depending on their preferences for delivery format as well as scheduling for *student* convenience. Students who are self-directed and independent may choose the flexibility that an online format offers, while those who value guidance and face-to-face contact may select the traditional format.

While the terms are often used interchangeably, there are basically two main delivery methods discussed in the literature: distance-based learning and online learning. Typically, distance-based learning refers to instructional delivery that is synchronous in nature—the student is not required to be in the same classroom as the Instructor but may receive the instruction in "real-time." Video-conferencing is an example of a distance-based learning approach.

With the evolution of the Internet and new course delivery systems that provide the ability to "post" material, curriculum delivery has enabled students to access course materials at the *student's* convenience, eliminating distance and time barriers. This is the typical format of many online courses. Online courses are administered in an asynchronous nature—students may be required to follow a predetermined time schedule for submitting assignments and to "participate," but the interaction between students and instructor is not necessarily taking place at the same time. Asynchronous communication in this format may still be two-way communication but it is, by its very nature, not "real-time" and is sometimes viewed as impersonal.

2. FACTORS AFFECTING STUDENT PARTICIPATION AND SUCCESS

There are many factors that influence a student's perception regarding any method of instructional delivery. Such factors include self-efficacy and the student's belief that they have the necessary skills to be successful, the mode of interaction used in the course, time commitment and self-discipline required, and the quality of assessment.

Self-Efficacy and Online Courses

Self-efficacy is a major component of an individual's perception of their ability to be successful in an activity. Bandura's social cognitive learning theory states that self-efficacy is an individual's "beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura 1994). Self-efficacy is affected by previous experiences, attitudes and perceptions of others, as well as verbal persuasion and encouragement from others. Perceptions of self-efficacy regarding computer skills may directly influence the motivation of a student to enroll in an online education course. As Miltiadou and Yu stated in a study conducted to validate an online efficacy instrument, students who are uncomfortable with online technologies spend more time learning how to use course tools rather than working on actual course content (1999). As a result, this may also influence the student's overall success and satisfaction in the course.

Mode of Interaction

In The National Center for Education Statistics Report on the Condition of Education 2002, 60% of undergraduates and 68% of graduate students reported that they used the Internet more often than live audio or television or prerecorded audio or television for delivery of information through distance education classes (US Department of Education 2002). This shows that delivery of information through the Internet is still often asynchronous, with little "real-time" communication between student and Instructor. The mode of interaction has sometimes been linked as a contributing factor in the success of an online course; however, in the report cited above, 51% of the master's students surveyed felt equally satisfied with the quality of instruction in their distance-education classes compared with their regular classes - 21% felt more satisfied while 27% felt less satisfied (US Department of Education 2002). In a study conducted by Yatrakis and Simon, there was also no significant difference in student performance when given the opportunity to choose between an online course and the traditional format (2002).

Critics of online instruction point out though that, while online courses may be typically asynchronous in nature, it does not have to always be that way. Those issues may be addressed through two-way communication technologies which may actually be tools included in the course delivery system (Bullen 1998). Many online course delivery tools such as BlackBoard, WebCT and eCollege include two-way communication tools such as Chat Rooms, Discussion Boards, and "virtual classrooms" to enable collaboration and communication in the learning environment. Many of these tools are time-dependent, but there are, however, other tools that enable asynchronous participation such as Threaded Discussions and e-Mail which allow students to respond to topics interactively at their convenience. These tools help to retain the time- and place-independence that many online students desire.

Time Commitment and Self-Discipline

While it is widely recognized that online courses offer students more flexibility with scheduling around work, course schedules, and other obligations, online courses may require more time commitment and self-

discipline than is expected in traditional on-campus courses.

It may also be noted that learning style and personality are also factors that may explain why some students are more comfortable with online courses while others may never feel secure in that environment (Yatrakis and Simon 2002). It would stand to reason that students who have a strong preference or need for teacher interaction and lack the discipline for self-study will not be as satisfied or as successful in an online course. Students sometimes feel information overload when they fail to log-in regularly or if they take a vacation from the course. In campus-based classes, having a regular meeting time helps to serve a pacing function and keep students focused on the course. There is often a tendency for the student to assert "I'll log-in tomorrow." This is consistent with previous research that found that key factors of student success in an online environment are self-discipline, self-direction, and good organizational skills (Bullen 1998; Hiltz 1994 and Simich-Dudgeon 1988).

Quality of Assessment

Effective assessment is equally important in both online and on-campus instruction. Timely feedback is essential to ascertain progress in the course and to give students necessary information so they may improve their performance for future course activities. Several studies have revealed concerns that the quality of academic feedback varies among online instructors (Clay 1999; Jeffries; Muirhead 2001). The lack of consistent teacher feedback has been cited as one of the main reasons why online classes are often viewed as impersonal (Muirhead 2002). Therefore, timely assessment and the frequency of interaction between instructors and students can directly impact the student's ability to satisfy the course learning objectives and increase students' overall satisfaction in the course.

3. PURPOSE FOR THIS STUDY

Participants in the study were previous and current students taking undergraduate courses in a Computer and Information Sciences department. Both majors and non-majors participated. To assess student perceptions regarding online education, a survey was distributed to ascertain factors contributing or hindering the success of online courses offered by the department.

4. METHODOLOGY

Two different versions of the surveys were distributed. One version was sent to online students and another version was given to on-campus students who had previously enrolled in one of two computer science courses offered by the University. These courses, an Advanced Computer Applications course and a Data Communications and Networking course, had been offered in both on-campus and online formats by the same instructor. For both groups, general demographic information was requested as well as information regarding the total number of online classes attempted. Questions regarding computer usage familiarity and skill level were also included to assess student self-efficacy levels. All responses were completely anonymous.

The first questionnaire was administered towards the end of a semester to the on-campus students currently enrolled in one of the two previously mentioned courses. In addition to the general demographic and computer familiarity questions, students were asked to respond to a series of statements regarding online course perceptions using a Likert scale indicating levels of strongly agree, agree, neutral, disagree, or strongly disagree. Statements focused on opinions of difficulty of the particular course the student was enrolled in versus if the course had been taken online, the perceived level of effort required for online courses, preferences for online education, and ability to learn more effectively online versus in a traditional classroom setting.

In the second survey, the same general demographic and computer usage familiarity questions were used. Some statements regarding online course perceptions were reworded to reflect the fact that the student had already taken an online course previously (e.g., "This course would be" was changed to "I found the online course to be"). In addition, the second survey included questions regarding the effectiveness of the tools and components such as threaded discussions, online lecture notes, as well as overall satisfaction with the online

course experience to ascertain the value of the tools used during previous online course offerings.

5. RESULTS

A total of 83 surveys were returned for the first questionnaire for the on-campus group and 29 students who had previously enrolled in an online computer science course responded for the second survey. The majority of the on-campus students responded since the questionnaire was administered during class both online in the computer applications course and as a written survey instrument as part of allotted class time for the networking course. The second survey response rate was approximately 24%. The much lower response rate for the previous online student population may have been due to the fact that requests for participation were solicited via e-mail and many addresses may not have been current accounts.

When previous online students were asked if they felt they acquired the same level of knowledge in the online class as they would in the same class taken on-campus, 82% agreed and that same percentage felt they could make the same grade whether the course was online or in a traditional classroom setting (see Figure 1). These results are consistent with Uskov's study of innovative web-based teaching of an Introductory Computer Information Systems course. His results showed that 81% of students stated online education produces at the least the same quality of knowledge and skills as traditional education. Uskov also noted that there is no significant difference in academic performance between online courses versus traditional classroom-based courses (2002). However, in our study, only 36% of the on-campus students felt that they would learn the same amount of material in the same course online and only 50% felt they could make the same grade in the online course (see Figure 1).

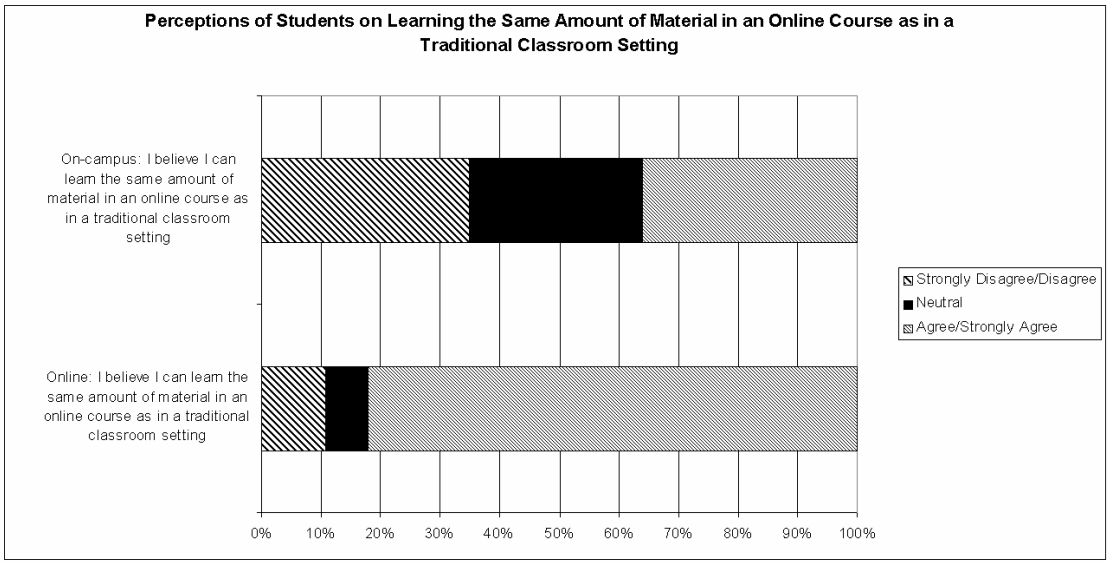

Figure 1

There were only slight variations of opinion regarding subject matter difficulty and required effort between online courses versus on-campus offerings. Over 60% of previous online students disagreed that the course was more difficult than if the same course was taken on-campus, and most did not feel the online version of the course required more effort (see Figure 2). While no empirical evidence was gathered in this particular study to determine if there was any variation in student performance between online courses versus on-campus courses, the author did not notice any significant difference in grade distribution or difference in overall success of students in the courses involved in the study, regardless of the course format.

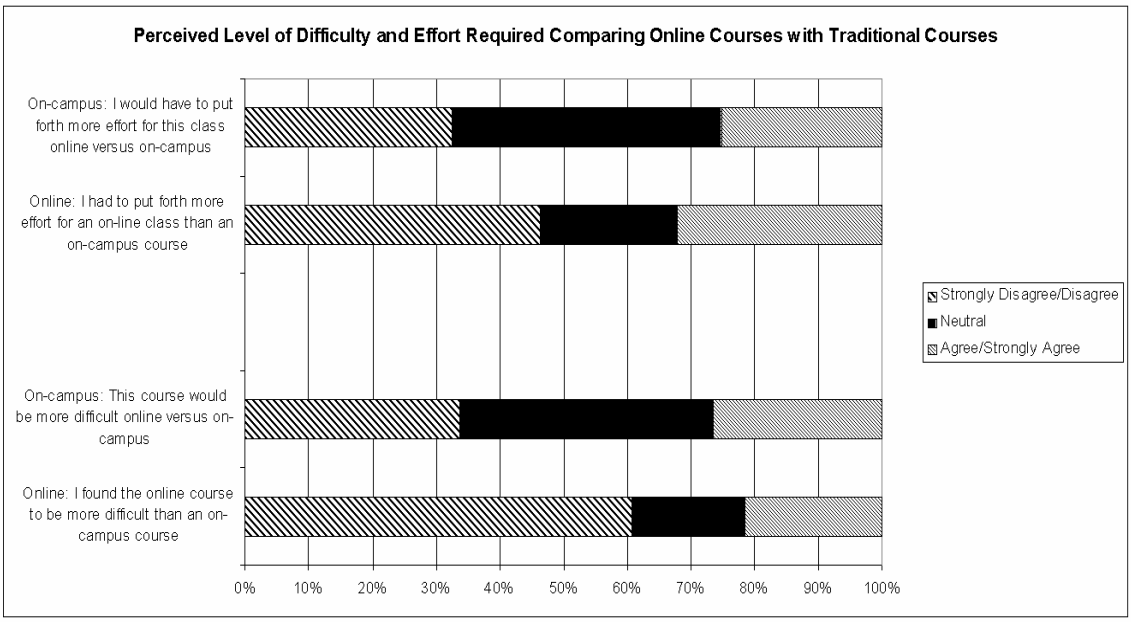

Figure 2

In both populations surveyed, the top three reasons cited for taking online classes were (or would be) scheduling convenience, work schedule flexibility, and time conflicts with other courses. The majority of students in both groups were neutral regarding their preferences for online courses though over 60% of previous online students felt that online offerings allowed them to take a heavier course load and over 90% of previous online students surveyed stated they wish more courses were available online.

6. CONCLUSIONS

The results of this study indicate that there are, in fact, some differences in perceptions between the two populations of online students and students without previous online course experience. While many online students stated that they did not feel they would necessarily be any more successful in an online course, for some, reasons such as scheduling convenience and time conflicts outweigh any potential disadvantages of online courses, such as low levels of interaction with the instructor as well as other students. As discussed, frequent and prompt responses from the instructor offering guidance and encouragement can also impact the success and overall student satisfaction in the online course. A clear understanding of the beliefs that influence an individual's likelihood of enrolling in an online course and those factors that will contribute or impede successful accomplishment of the course learning objectives is key to attracting and retaining students in online courses.

This study confirms the results of other researchers that students desire the flexibility and convenience that online courses provide. Educational institutions wishing to attract and retain these non-traditional student populations might evaluate the feasibility of offering these students a choice of both on-campus and online formats. While it may be more costly, providing courses in both formats may be a viable approach which simultaneously presents opportunities to the non-traditional online student who might not otherwise be able to pursue higher education.

Since this was a preliminary investigation of student perceptions of online education, the sample sizes were small and involved only students taking courses within the same department. A study with a more extensive scope is needed to examine the relationships in a broader context.

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