An Investigation of the Predictors of Student Satisfaction in Online Courses Using the Community of Inquiry Framework

Rhonda Lang
Operations Research Analysis
Aberdeen, Maryland USA

Walter A. Brown
Executive Director, Executive Ph.D. Program
Jackson State University
Jackson, MS, USA

Salam Khan
Department of Physics, Chemistry and Mathematics
Alabama A&M University
Normal, USA

Lydia D. Davenport
Center for Educator Preparation and Certification Service
Alabama A&M University
Normal, USA

Derrick Davis
Department of Teacher Education and Leadership
Alabama A&M University
Normal, USA

George Williamson III
Research Assistant
College of Education, Humanities, and Behavioral Sciences
Alabama A&M University
Normal, AL USA

Abstract

This study, An Investigation of the Predictors of Student Satisfaction In Online Courses Using the Community of Inquiry Framework, an online survey with 39 questions to gather data was used for this research study. Participants (N = 222) included African American undergraduate students enrolled in fully online courses. Data from the survey were examined. Findings of this study confirmed that teaching, social, and cognitive presence are significant predictors of student satisfaction with online courses. ANOVA and Fisher's least significant difference (LSD) showed statistical significance in relation to teaching presence. Additionally, ANOVA and Fisher LSD revealed a positive correlation existed between student satisfaction and social presence.

Keywords: *Online Courses, African American Students, Community of Inquiry*

Introduction

Millions of people have access to online distance learning around the world and considerable growth in ODL is predicted for at least the next ten years (Harrison, 2017). Student satisfaction has been seen as one of the key variables in determining the success or failure of distance learners, courses, and programs in the literature (Yukselturk & Yildirim, 2008). Retention of students has also been cited as one of the greatest weaknesses in distance education (Arhin & Wang'eri 2018). This view is supported by Artino (2008) who wrote that student satisfaction with online learning is a powerful predictor of course dropout rate, as well as students' intentions to enroll in future online courses. As online education develops, there are a number of rapidly growing factors that affect learner satisfaction (Yukselturk & Yildirim, 2008). Kuo, Walker, Belland, and Schroder (2013) advised that further research assess the design of online courses and use the findings to guide the prediction of student satisfaction so that the results may be verified and generalized toward diverse students.

The purpose of the study was to explore possible significance of four independent variables of age, sex, prior online courses, and college to dependent variables cognitive, and teaching presence each taken separately. This study addresses the research questions: 1) How do African American students perceive social, cognitive, and teaching presence in existing online courses? 2) To what extent do the factors age, gender, number of previous online courses, and college impact student satisfaction on teaching presence, cognitive presence, and social presence?

Theoretical Framework

The community of inquiry (COI) is the theoretical framework driving the research design. The COI model defines the online experience as a function of the relationship between three elements: social presence, teaching presence, and cognitive presence (Swan et al., 2008). The Community of Inquiry framework has been widely supported by research to provide a model of online learning that informs the design and implementation of distance learning courses (Rockinson & Wendt, 2016).

Due to the perceived importance of the dropout problem in online courses, a substantial research literature has developed examining what might enable students to persist and achieve in online courses (Hartnett,2011). Student satisfaction is a contributing interaction and degree of engagement factor toward student success and retention in online courses (Hoskins, 2012). Although, several variables contribute to student satisfaction, the quality of interaction and degree of engagement remain significant. Hoskins (2012) declared that an understanding of the interaction strategies employed during student-content, teacher-student, and student-student transactional engagement may be used to improve the strategies and techniques used during online courses. Detailed student feedback may provide a rich source of information to help instructors evaluate specific elements of course design and structure, make revisions, and assess the effects of those changes (Brew, 2008).

Tapanes, Smith, and White (2009) noted that multicultural differences in the online classroom have become an important area of research as distance learning courses and distance learning degrees become more common. Ashong and Commander (2012) asserted that African American university student perceptions of online learning is missing from the literature. Likewise, Eugene, and Clark (2012) determined from an exhaustive review of the literature that African American students have been omitted from distance learning studies, theory, policy, and practice.

This research study was limited based upon the most relevant variables studied in the literature. A second limitation related to the sampling approach is the inclusion of only those respondents who completed the survey voluntarily potentially introduced selection bias, since course satisfaction for those students who elected not to complete the survey may differ substantially from those students who completed the survey. Another limitation was the restriction to adult students enrolled in undergraduate online courses. Results of the study were limited in generalization to other adult learners in different types of higher education institutions and adults who are not pursuing degrees or attaining online courses.

Methodology

The COI model was used to determine student satisfaction in online courses. The independent variables (IVs) age, gender, number of previous online courses and college were examined with social, cognitive, and teaching presence as separate dependent variables (DV). The participants were students enrolled in online courses at a public Historically Black College or University (HBCU) in the southeast.

The undergraduate online courses had an enrollment of 814 at the time of the study. A convenience sample composed of those undergraduate students enrolled in online courses who accepted an electronic invitation to participate in the study by completing the survey. The data was collected within a two-week period beginning after the mid-term period.

The inclusion criterion was African American students enrolled in an online course during a fall semester since the research focused upon African American students enrolled in online courses at the institution. Traditional students are those students 18 and 24 years old, while non-traditional students are those students 25 years old or older. Also, the data were segregated based upon gender. The last distinction related to student satisfaction with a particular subject area.

Instrumentation

The instrument that was used for this study was the community of inquiry framework, a 34-item instrument. Each of the response options range from 1 (strongly disagree) to 5 (strongly agree).

Shea and Bidjerano (2008) conducted subsequent confirmatory analysis of the responses to the COI survey instrument where 2159 learners were involved in the study. The study was quite diverse, it included 39 public institutions. Among these institutions were community colleges, 4-year liberal arts colleges, and university centers offering degrees from one large, public state university system. Subsequently, the community of inquiry model was presented and validated as an instrument to explain variations in levels of student learning and satisfaction with online courses in higher education (Shea & Bidjerano, 2008). The reliablility coefficient for cognitive presence was 0.97, social presence was 0.96 and had an internal consistency of 0.93 for the facilitation element of teaching presence while the design and organization element had an estimated reliability of 0.95 (Shea & Bidjerano, 2008).

Data Collection and Analysis

All survey materials were prepared in Survey Monkey. A hyperlink to the survey was emailed to the online instructors. Prior to beginning the survey, respondents received informed consent information and an invitation to participate in the survey. The COI data were collected within a two-week period beginning after the mid-term period of the fall semester. The data were analyzed, and the results interpreted to determine whether statistical assumptions had been met.

The data collected were analyzed using IBM Statistical Package for the Social Sciences (SPSS) for Windows, version 22 (2014). Categorical demographic data such as gender, age range, course code, and race were converted to dummy variables. Descriptive statistics, inferential statistics, correlational analysis, one-way ANOVA, and Fisher's least significant difference (LSD) were used to analyze the quantitative data obtained for the study

Description of the Site/Population and Sample Participants

The target population consisted of undergraduate African American students who were enrolled in online courses at a public Historically Black College or University (HBCU) in the southeast. There was a total of 237 respondents ($N = 237$). As far as ethnicity, the participant were 219 African Americans (92.4%), eight Whites (3.4%), five other (2.1%), four Multiple Races (1.7%), and one Asian (0.4%). The total number of African American respondents was 222. There were three multiple race respondents that were included in the African American population.

Results and Primary Findings

Primary findings from this study confirmed teaching, social, and cognitive presence as having significance upon student satisfaction with online courses. The results obtained from an analysis of variance between the means for teaching, cognitive, and social presence revealed no significance to student's satisfaction with online courses for the independent variables age and gender. There was statistical significance in reference to the level of teaching presence and a student's college of enrollment. Statistical significance also existed with respect to the level of social presence and the number of previous online courses taken by a student.

An examination of the SPSS charts confirmed that the students recognized the existence of social, cognitive, and teaching presence as being prevalent in their online courses. Overall, frequency and percentage results disclosed that student perceptions of teaching presence was very high.

Frequency and percentage results for social and cognitive presence indicated that the students were satisfied with both social presence and cognitive presence. Teaching presence mean scores were the highest among the COI subgroups. Social presence mean scores were the least favorable overall among the three presences. Although social presence received the lowest rating among the subscales, this presence has the least impact upon student satisfaction through the lens of the COI instrument. Analysis of the two results affirmed that teaching presence exhibited the strongest, most substantial relationship to student satisfaction.

One-way ANOVA was ran to examine the means for students perceived level of teaching presence with regard to age, gender, number of previous online courses, and college of enrollment. The ANOVA test did not reveal any differences among the means for student satisfaction with teaching presence as it related to age, gender, and number of previous online courses. However, ANOVA results showed that the means for student satisfaction with teaching presence were statistically different for at least two groups within the college of enrollment category. As a result, additional exploration of the differences among means was conducted in order to determine specifically which means within the college of enrollment group were significantly different from each other. The mean for the College of Agriculture, Life, and Natural Sciences, College of Business and Public Affairs, College of Education, Humanities, and Behavioral Sciences, College of Engineering, Technology and Physical Sciences, and Do Not Know were examined using Fisher's LSD post hoc test.   Fisher's LSD test verified that the means for student satisfaction with teaching presence were different between the College of Business and Public Affairs and the College of Education, Humanities, and Behavioral Sciences. Additionally, the College of Education, Humanities, and Behavioral Sciences, and the Do Not Know group of students had differences among the means. Those students within the College of Education, Humanities, and Behavioral Sciences were included in both statistically significant pairs.

The means for cognitive presence were verified through one-way ANOVA. It was found that student satisfaction with cognitive presence showed no statistical difference among the means for age, gender, number of previous online courses, and college of enrollment. Consequently, none of the groups had a significant difference.

One-way ANOVA was ran to examine the means for students perceived level of social presence with regard to age, gender, number of previous online courses, and college of enrollment. The ANOVA test did not reveal any differences among the means for student satisfaction with social presence as it relates to age, gender, and college of enrollment. However, ANOVA results revealed that the means for student satisfaction with social presence were statistically different among at least two of the number of previous online courses groups.   As a result, additional exploration of the differences among means was performed in order to determine specifically which means within the number of previous online courses category were significantly different from each other.   The means for those students who had previously taken zero, one, two, and three or more courses were examined using Fisher's LSD post hoc test.   The Fisher's LSD test verified that the means for the level of student satisfaction for social presence differed among those students who had previously taken zero rather than two prior online courses. Additionally, the satisfaction levels for social presence for those students who had previously taken two rather than three online courses had differences between the means.   The research detected that the means for those students who had taken two prior online courses were included in both statistically significant pairs.

Recommendations Based on Results from the Study

A significant difference between students' satisfaction with teaching presences was found among the means for a student's college of enrollment. As a result, more needs to be known about whether teaching presence effect is due to differences in the colleges or disciplines or more direct teaching presence aspects such as design and leadership approaches. Exploration of disciplines should address the best approach for online courses.

Secondly, the study results revealed a difference between social presence and the number of previous online courses taken by a student.   It is important for institutions to improve the design and infrastructure of online courses. However, user friendly, clear, and available courses with instructor availability and support, tutorial services, and immediate response and feedback could help students feel more comfortable engaging other students and instructors throughout an online course.

Implications for Policy and Practice

In order to ensure that the resources allocated for online programs are governed and used efficiently, evaluations of online education must be done at the federal and state level.

One of the major findings from this study is that students perceive teaching, social, and cognitive presence to be highly relevant to their satisfaction with online courses. This finding has large implications for the need to provide distance education programs that are consistent with the mission and educational objectives of an institution. In order for institutions of higher education to offer online courses that are inline with their mission, it is imperative for federal agencies to fund programs that have been designed to bridge technology gaps among institutions.

The findings of this study revealed that those students who reported being satisfied with their online courses perceived the level of teaching presence, social presence, and cognitive presence to be high. This implies that program developers need to understand the predictors associated with student satisfaction with online courses in order to maintain academic quality of all aspects of online programs.   In fact, because the findings of this study imply that college administrators should have a clear vision of what is required to support the retention and persistence of students, institutions should designate funds to be applied toward research of online programs.

The results of this study revealed that there were differences between student satisfaction with teaching presence for those students enrolled in courses taught by the College of Business and Public Affairs versus those students enrolled in courses taught by the College of Education, Humanities, and Behavioral Sciences. The students enrolled in the College of Education, Humanities, and Behavioral Sciences had different online experiences from those students who did not know their college of enrollment. These findings expose the possibility that the quality of online courses may vary from subunit to subunit even within the same institution. Administrators could imply from the findings that internal evaluations of online effectiveness should be conducted for each of the courses offered at the institution.

Conclusion

ANOVA and Fisher' LSD testing revealed that there was a difference between the courses taught by the College of Business and Public Affairs and the College of Education, Humanities, and Behavioral Sciences. There were also differences among the courses taught by the College of Education, Humanities, and Behavioral Sciences and those students who did not know the college for the course of enrollment.

ANOVA and Fisher' LSD testing revealed that there was a difference between student satisfaction levels among those students who had previously taken zero rather than two prior online courses, as well as among those students who had taken two rather than three online courses. Additionally, ANOVA testing revealed that there was no difference between the levels of student satisfaction among the different age groups. Male and female student groups were found to be non-significant. Moreover, the results of this study confirmed the need for different types of interaction within the online environment. This was seen in the fact that the students acknowledged satisfaction with teaching, social, and cognitive presence within their courses. Finally, a one-way ANOVA determined whether there was a relationship between four demographic variables. The analysis showed no statistical significance in age and gender. However, a statistical difference was found between the number of previous online courses and a student's college of enrollment. Implications from this study dictate the need for the allocation of federal, state, and institutional funding to support continued improvement of online programs.

It is recommended that further research be conducted to include a larger sample. The sample should be expanded to include several Historically Black Institutions. Also, it is recommended that inputs be solicited from African American students enrolled in public and private majority institutions.

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