

A Study of Student Acceptance of Computer-Mediated Communication

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Abstract

This study examines students' perception of computer-mediated communication tools based on their experiences, gender, and age as actors on the technology acceptance model and how their perceptions may assist the institution's decisions to select and acquire those technologies. A quantitative research design using a questionnaire is used as the primary means of data collection. A combination of *t* tests, ANOVAs, chi-squares, and Pearson's product-moment correlation coefficients is used to analyze the data. The results of this study may be beneficial to administrators at the university level when making decisions about technologies that may affect the teaching and learning process.

Introduction

Higher education, like many industries, realizes the importance of technology for organizational growth and survival. "There are many organizations that spend a large portion of their budget on information technology to improve [student] performance or overall organizational performance" (Klaus, Gyires, & Wen, 2003, p. 106). Organizations examine and leverage the opportunities advances in technology (hardware and software), the Internet, and greater digital speeds represent to increase customer contact and profitability. Universities are leveraging advances in computer-mediated communication

(CMC) tools for course delivery to enhance existing courses as well as full degree programs.

Adoption of these technologies should not be made simply because competing institutions have adopted similar technologies. Rather, knowing the customers or student's perception of and behavioral intention to use technology should be key in the decision-making process. Determining a strategy to integrate CMCs into course delivery generates a number of questions:

1. How will the CMC strategy affect the reputation of the university?
2. Will an aggressive CMC strategy result in higher or lower enrollments?
3. How will students and potential students view CMCs in their coursework?
4. What is the reaction of area employers?
5. How will the academic community (faculty, potential faculty, accrediting boards, etc.) view the integration of CMCs?

Student perceptions of CMCs in their course work are very important. They represent the main source of funding and if their view of CMCs is negative then they are more likely to seek their education elsewhere (Walker, Vaz, & Kujawa, 2004). It is important to understand student attitudes toward courses enhanced by or delivered completely with CMCs (Liaw, 2002). The absence of knowing students' perception of CMCs can have a profoundly negative impact on enrollment and overall funding for the institution.

Problem Statement

The problem addressed in this study is the students' perception of, attitudes toward, and behavioral intention to use CMCs, specifically Blackboard, and how that

information may influence institution decision making. Institutions considering CMCs may be able to predict the value of those technologies by better understanding the students' perceptions, attitudes, and behaviors toward the systems and how the students' past learning experiences influence those variables. CMC tools can be conceptualized as a problem of aligning the relationship between the organization's strategic goals, the educational objectives of the students, and the technologies themselves to take advantage of their opportunities and capabilities (Reich & Benbasat, 2000). The value of the investment in CMCs can be derived from the use it receives (Lederer et al., 1998). Administrators facing lower enrollments and budgetary constraints need to rely more on data to determine whether the investments in these CMC technologies as well as supporting activities should continue or be curtailed, changed, eliminated, or increased.

Purpose of the Study

The purpose of this quantitative survey research study is to test TAM (Technology Acceptance Model) to describe the perception of students relative to CMC technologies, specifically Blackboard's Course Management System. Blackboard's system examined student perceptions of CMC technologies using TAM (with independent variables of perceived usefulness and perceived ease of use; mediating variables attitude toward use and behavioral intention; and a dependent variable actual use) and independent variables of age, gender and learning style (as measured by through Kolb's (1984) LSI) to assist senior administrators in decisions regarding information technologies that will be or are used by students in support of an institution's strategic goals.

Relationships between the variables will provide administrators with important information that may assist future decisions and provide a method of evaluating future technologies. Ensuring the targeted population at a university, in this case students, use the technologies will help administrators answer to their boards of directors or trustees regarding the value or potential value of a new system. The study was conducted at a small private university in southeastern Michigan using students enrolled for the Summer 2005 semester with the College of Management. Only students from the main campus were surveyed.

Methodology

This quantitative study focused on the perceptions of higher education students at a Midwestern university's College of Management pertaining to CMC technologies, specifically the Blackboard Course Management System. The students were asked to evaluate their overall experiences with this technology. This study explored the relationships and interrelationships between independent variables (age, gender, and learning style) and independent variables (perceived usefulness, perceived ease of use, attitude toward use, behavioral intention, and use). The independent variables of age, gender, and learning style were selected to determine the influence any or all have on the independent variables embedded within TAM.

Age and gender are included with no a priori expectations. Although much of the research of the 1990s suggested women of all ages had fewer opportunities and less skill using technology than males, information since then indicates the lack of access, lack of computer literacy, and skills issues are diminishing (Gunn, McSparran, Macleod, &

French, 2003). They are included in the study as moderating variables to determine whether they influence the dependent variables of TAM and student learning styles. The independent variable learning style is included to determine the various learning styles that may exist within the population. It will provide a picture of the influence those learning styles has on the actual use or acceptance of CMC technologies, as an external variable of the technology acceptance model.

The independent variables of perceived usefulness, and perceived ease of use along with the dependent variables of attitude toward use, behavioral intention, and actual use make up Davis (1989) technology acceptance model (TAM). TAM was constructed to predict user acceptance of information technology (CMC) founded upon a belief–intention–behavior theme (Lederer et al., 1998). Belief, whether positive or negative, will lead to a type of attitude or intention that develops into a behavior or action.

This study only included those students who were actively taking classes at a 4-year private college in southeastern Michigan. The data collection took approximately 1 week by visiting classes in the undergraduate, graduate, and doctoral programs of the College of Management. A sample size of 171 participants was determined to be sufficient for this study. A combination of *t* test and Pearson's product-moment correlation coefficient was used to analyze the data.

Conclusions and Recommendations

Based on the data analysis and hypothesis results, the investigator is able to respond to the research question: How do age, gender, and learning style differentially influence attitude, behavioral intention, and use of computer-mediated communication technologies? The data analysis did not find a statistically significant difference for age,

gender, and learning style influencing attitude, behavioral intention, and use of CMCs. This suggests that, for this study, past experiences with and skills acquired or transferred from the workplace or similar course work experiences have helped participants develop skills and comfort in using CMCs. “While, as software products, the emergence of these systems has been a recent development, in concept they simply represent an integration of functions that previously have been performed by separate products” (Inglis et al., 2002, p. 13). Therefore, for this study, age, gender, and learning style have little or no influence in the overall perception of CMCs.

The study found no statistical significance between gender and the variables of TAM, specifically perceived ease of use and usefulness, thus supporting the null hypotheses for 1a and 1b that the average score for males and females would be the same for either perceived usefulness or perceived ease of use, and suggesting gender has little or no influence upon either perceived usefulness or perceived ease of use. The study found no statistical significance between age and the variables of TAM, specifically perceived ease of use and usefulness, thus supporting the null hypotheses for 2a and 2b respectively that the average score for both age groups would be the same for either perceived usefulness or perceived ease of use. This again suggests that age had little or no influence upon either perceived usefulness or perceived ease of use. The integration of CMCs is neither new nor alien to students (Peters, 1998). The ubiquity of applications designed to promote collaboration and communication in the workplace may contribute to the lack of difference between the age and gender groups. Organizations rely upon the use of a myriad of technologies to connect with virtual team members and perform project work without the luxury of connecting face to face.

Based on the results of this study, several recommendations may be made. First, this study was conducted using College of Management students only. For the results discovered in the study to have greater generalizability, other studies should be conducted using populations from other colleges as well. It would be beneficial for future studies to draw from different majors, education levels, and colleges.

Second, an experimental study may be undertaken to determine what contributes to students' perception of and overall acceptance of CMC tools. Without further study the effect learning style, age, gender, or some other factor(s) may have on student acceptance of CMC tools cannot be determined. Factors that could be considered include motivation, prior knowledge or experience, computer and technology literacy, economic status, employment situation, and employer support.

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