

Students Attitudes Toward the Use of Technology in the Classroom

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The Attitudes Toward the Use of Technology Survey was used to assess students' opinions with regard to technology use in the classroom. A Pearson product-moment correlation was conducted on the Personal Use Total Score and the Attitude Total Score taken from the second and third sections of the survey, respectively. A medium positive correlation was found with an r value of .490 ($p < .0005$). A multiple regression was conducted to distinguish whether attitude toward the use of technology in the classroom could be predicted by gender, age, class standing, or major emphasis. The highest coefficient was .125, with a non-significant R -squared value of .067.

Introduction and Review of Literature

Although the modern learning environment continues to evolve, instructors need to remember to adhere to sound pedagogical principles (Ahola-Sidaway & McKinnon, 1999; Grasha & Yangarber-Hicks, 2000). With the increased use of instructional technologies such as Blackboard, websites, online resources, PowerPoint, and discussion forums, instructors may find themselves focusing more on the "bells and whistles" as opposed to the final goal of helping students learn. A concern for instructors should be that we do not overwhelm students with technology; this could lead to the students becoming frustrated with the technology itself, hindering their efforts to learn the course content. One way to ensure that instructors are positively influencing the learning environment with their use of new technologies is by asking the students what their opinions are with regard to technology use. Based on the knowledge that students have different learning styles and may need course content presented in a variety of ways, assessing students' attitudes toward technology is essential (Bostock, 1998).

The research questions for this study were to (1) examine the relationship between students' personal use of technology and their attitude toward the use of technology in the classroom and (2) investigate whether a student's age, gender, class standing, or major concentration could be used to predict one's attitude toward the use of technology in the classroom.

Methodology

The subjects for this study were undergraduate and graduate students of a human performance and health promotion department within a mid-sized, urban university. Subjects completed the Attitudes Toward the Use of Technology Survey while enrolled in courses offered during the spring of 2005; the completion of the instrument took approximately 10-15 minutes. This survey was created by the researcher and used in a previous study (Lukow & Ross, 2003) that investigated attitudes of students in a recreation curriculum. The instrument was altered slightly to meet the needs of the population of this study. This instrument was utilized to collect the data regarding the attitudes of students toward technology. The survey contained three sections: (a) personal information, (b) personal use of computers, and (c) attitudes toward the use of technology.

The first section of the survey gathered demographic data from each respondent. Items addressing such issues as age, gender, and skill level regarding computers were included. The second section requested specific information about the respondents' personal use of computers. A scale was provided to guide the responses for these 11 questions. This scale provided five options regarding how frequently the respondent used the specified technology: (a) never, (b) rarely, (c) sometimes, (d) often, and (e) frequently. The Cronbach Alpha for this section of the survey was .834.

The final section of the survey addressed the respondents' attitudes regarding how they feel the specified technologies have either facilitated or distracted their achievement of the objectives of the courses they have taken in the human performance and health promotion department at the institution within which they are enrolled. A scale was provided to guide the responses; the range of the scale extended from -5 to +5 with 0 being undecided. A total of 12 questions addressed such technologies as class discussion forums, email, and class listservs. The responses in this section were totaled to provide a score ranging from +60 to -60. A high score on this section signified a more positive attitude toward technology while a low score indicated a more negative attitude. The Cronbach Alpha for this section of the survey was .843.

A descriptive analysis was performed on all three sections of the Attitudes Toward the Use of Technology Survey. Pearson product-moment correlation was performed to investigate the first research question regarding the relationship between students' personal use of technology and their attitude toward the use of technology in the classroom. Multiple regression was used to answer the second research question of whether a student's age, gender, class standing, or major concentration could be used to predict one's attitude toward the use of technology in the classroom.

Results

Descriptive Statistics: Demographics

Out of a total of 244 students who participated in the study, 68% were female. The age range categories were from "18-19" to "41+". The largest number of students (25%) fell into the 22 to 23 years of age category with 16.4% being in the 20 to 21 age range and 13.9% being between 24 and 25. The breakdown of class standing included the following: freshman-4.5%, sophomore-9.8%, junior-19.7%, senior-32.4%, and graduate-33.6%. Respondents were asked what they perceived their computer skill level to be based on a scale of 1 (novice) to 5 (expert). Thirty five percent of respondents recorded their skill level as "3" and 49% felt their skill level was "4". Only 1% of respondents recorded their skill level as "1".

Descriptive Statistics: Personal Use of Computers

With regard to what technology was recorded as being most frequently used by respondents, "web surfing" was listed by 82.5% as being used more than one hour a day. "Word processing" and "one to one email" were used more than one hour a day 72.5% and 71.6% respectively. Technologies that were listed as "never" being used were "creating web pages" with 69.5% and "computer programming" with 65.1%. "One to many email" was reported as 38.7% for "never" and 25.9% for "rarely".

Descriptive Statistics: Attitudes Toward the Use of Technology

The mean score for the Attitude Total Score was 25.53 (on a scale of -60 to +60) with the range of scores falling between -22 and +60. Respondents recorded the following technology as positive (+1 to +5): one to one email (85.9%); multimedia, such as PowerPoint (84.9%); Internet, such as library resources (78.2%); and course websites (76.9%). Several technologies were viewed as negative (-1 to -5): class discussion forums (7%) and on-line quizzes (6.2%). Technologies that were recorded with the highest "not applicable" scores were DVD with 29.5% and Music CD with 27.9%.

Pearson Product-Moment Correlation

A Pearson product-moment correlation was conducted on the Personal Use Total Score and the Attitude Total Score. A medium positive correlation was found with an r value of .490 ($p < .0005$).

Multiple Regression

A multiple regression was conducted to distinguish whether attitude toward the use of technology in the classroom (as measured by attitude total score) could be predicted by gender, age, class standing, or major emphasis. The highest coefficient was .125, with an R-squared value of .067. This result was not significant with only 6.7% of the variance being explained by the model.

Conclusions and Recommendations

With almost 50% of respondents recording their skill level as “4”, this showed that the sample felt they were fairly competent with technology. This result was supported by the data gathered from the “Personal Use of Computers” section of the survey instrument. With “web surfing”, “word processing” and “one to one email” all garnering usage rates above 70%, it is suggested that students are becoming quite proficient with several types of technological tools. These three uses for computers seem logical for students since all three are most likely used on a regular basis to complete assignments and coursework required by instructors.

Although the range of scores was quite wide with the Attitude Total Score, the mean score was in the positive range with 25.53. This is similar to the results (M=23.51) of a previous study investigating recreation students’ attitudes toward technology (Lukow & Ross, 2003). It appears that students felt the technology being used frequently by instructors was helping them achieve the objectives of a course. Many instructors use email, PowerPoint, and course websites to help supplement classroom instruction, so this supports the continued use of these technologies for instructional purposes. Class discussion forums and on-line quizzes were viewed as negative by respondents; this result may give instructors some insight into what types of online tools, offered through packages such as Blackboard, are most/least useful in helping students through the learning process of a course.

The medium positive correlation found between the personal use of computers of respondents and their Attitude Total Score appears encouraging for instructors who utilize instructional technologies; however, further investigation is needed to support this finding. Instructors need to not only be sensitive to those students who use technology frequently, they also need to be aware that those who may not use technology (or do not have access to it) might not feel as comfortable with its use in the classroom. Providing a variety of delivery methods is always helpful in meeting the needs of the many learning styles that students possess.

Recommendations for further research include replicating this study with different populations in order to continue to validate the Attitudes Toward the Use of Technology survey as well as to investigate if the results are similar across curriculums. Investigating why students feel the way they do about technology through the use of qualitative methods would be highly beneficial. This would provide information on such issues as why a student liked or did not like a certain technology, whether environmental or personal factors influenced those likes/dislikes, or whether time or work constraints inhibited their learning.

References

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