The Relationship Between Student and Faculty Attitudes Toward Technology

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Abstract

The purpose of this study was to examine student and faculty attitudes toward computer technology in advanced arts classes at a southeastern university in the United States. This one semester study was focused on the traditional arts disciplines of art, dance, music, and theatre. This correlational analysis limited to faculty members and students engaged in the 3000 and 4000 level undergraduate classes. The sample of 306 students and 45 faculty members participants was taken from the population from the visual and performing arts disciplines. Attitudes of both students and faculty members were examined through perceptions of liking, usefulness, confidence, and anxiety levels toward computers. Results indicated that based on correlational analysis, the more faculty members liked computers the more students liked computers had more positive attitudes toward computers when more competent with computers. Furthermore, the results showed that faculty members had more positive attitudes toward computers when they felt more competent with computers. Based on the results of this study, the researcher recommends that universities need to initiate formal computer training programs for the arts faculty to engage students use computer technology in the arts. (Contains 5 tables)

Introduction

Dewey (1934) believed that the arts could not be shut off from human environment and society because the arts were a reflection of society and the environment. The comprehensive nature of computer technology influenced American society from everyday life to higher education classrooms and academic disciplines. As a result, the pressure has increased on the arts to embrace computer technology as a staple for producing art and teaching the arts in higher education. The embedded qualities of computer technology in everyday life have caused a conflict between popular American culture and the traditional disciplines of visual and performing arts (Bowers, 1998; Penny, 1997).

Researchers have suggested that student attitudes toward computer technology were a result of exposure to computers (Huang, 2002), experience with computers (Busch, 1995; Mitra, Steffensmeier, Lenzmeier & Massoni, 1999; Necessary & Parrish, 1996; Orr, Allen & Poindexter, 2001), and computer training (Dusick & Yildirim, 2000). These factors were subject to influences from faculty members (Grasha, 2002; Kuh & Hu, 2001) and academic disciplines (Chao et al, 2003). However, other researchers indicated that student attitudes toward computers were already formed before college years due to the integration of technology in daily life (Kenney, 2002; Tapscott, 1998; Wangemann, Lewis & Squires, 2003).

On the other hand, faculty members' attitudes and acceptance of computer technology were influenced by the academic discipline culture (Gillespie, 1998). Faculty members' attitudes reflected the values of their academic discipline, which was modeled by the faculty member in behavior, and choice of instructional processes (Stark & Lattuca, 1997). The processes of student-faculty interaction included the influences on student behavior and modes of thinking (Gates, 2000; Kuh & Hu, 2001; Woodside, Wong & Wiest, 1999).

Because of the nature of the academic discipline and the individual faculty member's interest, the use of technology in higher education progressed faster in some disciplines more than others (Gillespie, 1998). The culture among the faculty members comes from the discipline, professional practice, and scholarship (Kezar, 2002). The influence of faculty members on students was evident through studies and theories of student-faculty engagement and student-faculty interaction (Chickering & Gamson, 1987; Kuh & Hu, 2001). Researchers indicated that faculty members had a significant influence on students through behavioral norms (Woodside, Wong & Wiest, 1999) and one-on-one interaction (Grasha, 2003).

Cultural norms and values have been passed from one generation to the next generation through the process of enculturation in the disciplines and professions (Jonassen &

Land, 2000; Lave & Wenger, 1999; Wenger, 1998). The tradition of mentoring and apprenticeship training in the arts has been a powerful tool to train students in the ways of the discipline (Kindelan, 2001; Madsen, 2003; Rolston & Herrera, 2000). In the last two years of undergraduate school, students have been culturally conditioned for the discipline through student-faculty interaction and mentoring from faculty members (Brown, 2002).

Students in the arts were influenced by faculty members' behavior (Madsen, 2003; Rolston & Herrera, 2000) that consisted of discipline culture norms (Lave & Wenger, 1999). Through student-faculty engagement, students acquired the shared repertoire of resources for negotiating meaning through established patterns of engagement, organizational structure within the culture, symbols, concepts, gestures, and history (Wenger, 1998). Students entered the enculturation process, which included the discipline characteristics of a common cultural and historical heritage, an interdependent system, and a reproduction cycle (Jonassen & Land, 2000).

Description of the Study

In this study, the relationship of faculty attitudes toward computer technology and student attitudes toward computer technology in advanced arts classes was evaluated using faculty

and student perceptions. Attitudes of both students and faculty members were examined through perceptions of liking, usefulness, confidence, and anxiety levels toward computers. Using these variables, the study evaluated the relationship between student and faculty attitudes toward computers in advanced arts classes at a southeastern United States university.

The sample of 306 students and 45 faculty members participants was taken from the population from the visual and performing arts disciplines. The specific population for the study was the students and faculty in the 3000 and 4000 level undergraduate arts classes in art, dance, music, and theatre disciplines.

The research question for this study focused on the relationship between student and faculty attitudes toward computers. The following was the central research question for this study:

Is there a statistically significant relationship between student and faculty attitudes regarding the level of computer liking, confidence in computers, usefulness of computers, and anxiety toward computers in advanced arts courses?

The null hypotheses for this study:

- There is not a statistically significant relationship between student and faculty level of liking toward computers.

- There is not a statistically significant relationship between student and faculty level of confidence toward computers.
- There is not a statistically significant relationship between student and faculty level of usefulness toward computers.
- There is not a statistically significant relationship between student and faculty level of anxiety toward computers.

The Computer Attitude Scale (CAS) developed by Loyd and Gressard (1984) was administered to the student and faculty participants. The instrument was designed to record participant responses using a five-point interval response scale. The null hypothesis was tested using inferential statistics at a .05 level of significance. A correlational approach was used to gain a better understanding of the factors contributing to the relationship and gain insight into relationships between the student attitudes toward computer technology and experience with computer technology.

The demographics of the student participants were summarized as 60% female, 65% 22 years old or less, 83% White ethnicity, and 35% studying in the music discipline. The demographics of the faculty participants were summarized as 60%

male, 84% 31 years old and above, 91% White ethnicity, and 49% teaching the music discipline.

Hypothesis Testing

In testing the hypothesis, bivariate correlational statistics was used for analysis. As shown in Table 1, there was a statistically significant relationship between student and faculty level of liking toward computers in advanced arts classes (r = .29, p < .05). The null hypothesis was rejected. The evidence suggested that there was relationship between student and faculty level of liking toward computers. This was a moderately strong relationship indicating that the more faculty liked computers the more students liked computers.

Table 1

Relationship between Student and Faculty Level of Liking toward Computers in Advanced Arts Classes

Group	*n*	*M*	*SD*	*r*	r^2	*p*
Student	306	3.33	.85	.29*	.09	.05
Faculty	45	3.51	.92			

*p < .05

There was not a statistically significant relationship between student and faculty level of:

- Confidence toward computers (r = .17, p > .05).
- Usefulness of computers (r = .27, p > .05).
- Anxiety toward computers (r = -.06, p > .05).

To continue this analysis, the level of liking computers was examined for significant correlations from both faculty and student participants. This analysis provided further explanation and understanding of connected variables and influence in the participant responses.

The summaries of findings shown in Table 2 and Table 3 illuminated a number of significant relationships that gave additional insight into the student participant level of liking computers.

The following are results found in Table 2:

1. A statistically significant relationship existed between the student level of liking computers and the student reported level of computer expertise (r = .52, p < .01).
2. A statistically significant relationship existed between the student level of liking computers and the number of hours per week the student used a computer expertise (r = .45, p < .01).

Table 2

Significant Relationships between Student Level of Liking Computers and Student Characteristics

				Level of Liking		
	n	*M*	*SD*	*r*	r^2	*p*
Level of Expertise	306	3.19	.71	.52	.27	.00**
Hours Per Week	306	3.21	1.18	.45	.21	.00**

**p < .01

The following are results found in Table 3:

1. A statistically significant relationship existed between the student level of liking computers and the student attitudes toward computers (r = .91, p < .01).
2. A statistically significant relationship existed between the student level of liking computers and the student anxiety level toward computers (r = -.72, p < .01).
3. A statistically significant relationship existed between the student level of liking computers and the student confidence in computers (r = .80, p < .01).
4. A statistically significant relationship existed between the student level of liking computers and the student perceived level of usefulness toward computers (r = .69, p < .01).

Table 3

Significant Relationships between Student Level of Liking Computers and Computer Attitude Scales

				Level of Liking		
Scale	*n*	*M*	*SD*	*r*	r^2	*p*
Attitudes	306	3.81	.63	.92	.83	.00**
Anxiety	306	4.03	.68	-.72	.51	.00**
Confidence	306	3.88	.70	.80	.64	.00**
Usefulness	306	4.02	.59	.69	.47	.00**

**p < .01

The summaries of findings shown in Table 4 and Table 5 illuminated a number of significant relationships that gave additional insight into the faculty participant level of liking computers.

The following are results found in Table 4:

1. A statistically significant relationship existed between the faculty level of liking computers and the faculty reported level of computer expertise (r = .41, p < .01).
2. A statistically significant relationship existed between the faculty level of liking computers and the faculty level of computer training (r = .35, p < .01).

Table 4

Significant Relationships between Faculty Level of Liking Computers and Faculty Characteristics

				Level Of Liking		
	n	*M*	*SD*	*r*	r^2	*p*
Level of Expertise	45	3.11	.83	.41	.17	.00**
Level of Training	45	2.02	1.23	.35	.13	.00**

**p < .01

The following are results found in Table 5:

1. A statistically significant relationship existed between the faculty level of liking computers and the faculty attitudes toward computers (r = .95, p < .01).
2. A statistically significant relationship existed between the faculty level of liking computers and the faculty anxiety level toward computers (r = -.79, p < .01).
3. A statistically significant relationship existed between the faculty level of liking computers and the faculty level of confidence in computers (r = .87, p < .01).

4. A statistically significant relationship existed between the faculty level of liking computers and the faculty perceived level of usefulness of computers (r = .88, p < .01).

Table 5

Significant Relationships between Faculty Level of Liking Computers and Computer Attitude Scales

				Level of Liking		
Scale	*n*	*M*	*SD*	*r*	r^2	*p*
Attitudes	45	3.87	.74	.95	.91	.00**
Anxiety	45	4.07	.78	-.79	.62	.00**
Confidence	45	3.86	.74	.87	.76	.00**
Usefulness	45	4.02	.75	.88	.77	.00**

**p < .01

Discussion

These results were consistent with studies by Christensen (1997), Gates (2000), Grasha (2003), and Kuh and Hu (2001). In the study by Gates (2000), the researcher concluded that the basis for the faculty role was to model the behavioral norms for student. Grasha (2003) claimed that faculty members provided a model of behaviors, modes of thought and processes through

indirect and direct influences. Kuh and Hu (2001) further confirmed that student-faculty interaction had significant influence on student activities and performance. More specifically, Christensen (1997) insisted that teachers' positive attitudes toward computers affect student attitudes toward computers in a positive way.

In this study, more in-depth examination of the faculty level of liking computers revealed an inter-related pattern that consisted of variables that contributed to this finding. The faculty level of computer expertise and computer training were significantly related to liking computers. The continued chain of significant findings suggested that faculty likings of computers were positively related to their confidence, usefulness, and overall attitudes toward computers, and had a significant negative relationship with anxiety toward computers.

These findings were consistent with studies that suggested that faculty members computer competency and experience increased positive attitudes, liking, and confidence, and decreased the level of anxiety toward computers. Lee (1998) reported from a study of 924 faculty members that the more faculty members used computers, the more confident they were about computers, and the less anxiety they experienced when working with computers. This was further confirmed by a study at the University of Tennessee, which indicated that participants

reported computer comfort level influenced the use of computer technology (Groves & Zemel, 2000). Another study confirmed that computer competency level was significantly related to attitudes toward computers and amount of computer training (Dusick & Yildirim, 2000).

In this study, the student liking findings summary and discussion were included to illustrate that student liking of computers was comparable to faculty liking computers in regard to the related variables. However, faculty liking level was higher, and influential in the student liking computers. These findings were suggested by the higher liking response means of the faculty participants.

More in-depth examination of the student level of liking computers revealed an inter-related pattern that consisted of variables that contributed to this finding. The student level of computer expertise and hours per week using a computer were significantly related to liking computers. The continued chain of significant findings suggested that student likings of computers were positively related to their confidence, usefulness, and overall attitudes toward computers, and had a significant negative relationship with anxiety toward computers.

These findings were consistent with studies that suggested that student computer competency and experience increased positive attitudes, liking, and confidence, and decreased the

level of anxiety toward computers. Busch (1995) reported that undergraduate student computer experience was the most significant predictor of overall student attitudes toward computers. Orr, Allen, and Poindexter (2001) also confirmed this finding in a study of undergraduate students in a computer literacy course.

Conclusions

The following conclusions are made based on the findings of this study and are focused on faculty and student attitudes toward computers.

- The more faculty members like computers the more students like computers in advanced arts classes.
- Faculty members have more positive attitudes toward computers when they feel more competent with computers. Faculty competence with computers is significantly influenced by the amount of formal computer training, confidence in computers, and computer anxiety.
- Students have more positive attitudes toward computers when they feel more competent with computers. Student competence with computers is significantly influenced by the amount of computer use, ownership of a computer.

Recommendations

Based on the results of this study, the researcher recommends that universities need to initiate formal computer training programs engaging all faculty members. This will provide faculty with more confidence in using and learning about computer technology and will increase the student engagement in the use of computer technology in the arts.

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