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ABSTRACT

This paper reports a survey conducted at a private midwestern university to investigate 143 undergraduate students' attitudes toward computers. The study used a 10-item questionnaire called General Attitudes toward Computers. Results indicated that students had positive attitudes toward computers. There were no significant differences in attitudes between male and female students or between students taking and not taking a computer-related class. Comparison of data from freshman, sophomore, junior, and senior students also did not reveal any significant differences. Appendices provide a comparison of male and female responses, a frequency analysis of all responses, and a copy of the questionnaire. (Contains 22 references.) (JDD)

# COLLEGE STUDENTS' ATTITUDES TOWARD COMPUTERS

by

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## INTRODUCTION

This paper reports a survey conducted at a private university located in the Midwest. It was designed to investigate undergraduate students' attitudes toward computers.

The need for this investigation was generated by the fact that no survey of this kind had been conducted before at this institution. Besides, a need for some insight in the relationship between gender, computer related courses, and year in school and attitudes toward computers was found necessary by school's officials.

This survey sought answers for three questions as follows:

1. Is there any significant difference between male and female undergraduate students regarding to their attitudes toward computers?
2. Is there any significant difference in attitudes toward computers among students currently enrolled in computer related classes and students not currently enrolled in such classes?
3. Is there any significant difference between freshman, sophomore, junior, and senior students regarding to their attitudes toward computers?

## LIMITATIONS OF THE STUDY

The following statements were limitations of this study:

1. The study was limited to the students at a private university in the Midwest United States.
2. The sample used in this study was composed by freshman, sophomore, junior, and senior students. No graduate or continuing education students were included.
3. All the subjects were taken classes offered by the College of Business; however, their major areas did not include only Business Administration or Business related majors.
4. The study did not include variables such as age or previous computer experience.

## PREVIOUS FINDINGS

Levin and Gordon (1989) conducted a research involving 222 students in grades 8 through 10. Their research tried to study the effect of gender and computer experience on attitudes toward computers. Their findings suggested that previous exposure to computers had a stronger influence on the subjects' attitudes than did sex. Since boys usually have more exposure to this technology, it is expected that they have a more positive attitude than do girls.

At the college level, Ogozalek (1989) surveyed 212 Computer Science students to determine their attitudes toward computers, she concluded that:

> Women seems to be full of contradictions and confusion in their attitudes toward computers. Men, on the other hand, are consistent and self-assured. Men feel competent when using computers, and as they gain experience, the machines become more predictable and, therefore, easier to control. On the other hand, as women gain experience, they characterize computers as more unpredictable, when it seems that just the opposite would be the case.

Popovich and others (1987) by conducting a research with 365 undergraduate students found out that female students presented more negative reactions to computers than did male students. They also concluded that the number of hours spent per week using a computer and the number of college-level computer courses taken differ greatly among male and female students.

Some researchers have found, however, that no significant difference exists between male and female and their attitudes toward computers.

Norales (1987) surveyed 109 freshman and sophomore students taken an introductory class in Information Systems. Results showed that students seemed to have positive attitudes without regard to gender.

Gressard and Loyd (1987) investigated 356 students to determine the effects of math anxiety and sex on computer attitudes. They reported that the correlation between sex and computer attitudes were "generally low, and not statistically significant."

A prior research conducted in 1985 by the same researchers suggested that students' attitudes toward computers were significantly affected by computer experience and not by sex.

## SAMPLE

One hundred and forty-three undergraduate students participated in this survey. Seventy-three subjects (51%) were male and seventy subjects (49%) were female.

## INSTRUMENT

This study employed a 10-item questionnaire developed by Reece and Gable (1982) called General Attitudes Toward Computers. A .87 alpha internal consistency reliability factor was reported by the authors. The questionnaire's statements are presented in Appendix C.

The instrument contains five affective statements, four behavioral statements, and one cognitive statement. Two items, one belonging to the affective group of statements and the other belonging to the behavioral group, employed negative word construction.

A five-point Likert response scale was employed with responses ranging from strongly agree (5) to strongly disagree (1). Thus, a high average score will mean a positive attitude toward computers.

This instrument was also tested by Woodrow (1991) and it "was found to be reliable, factorially stable and valid. ... In addition, it was short and equally valid at the secondary and post-secondary level."

The 10-item questionnaire was administered during the Spring semester of 1992 to students taking classes offered by the College of Business at a private Midwest university. Efforts were made to assure that all questionnaires were administered in the same day in order to eliminate duplicity and to reduce anxiety among participants.

## RESULTS

After data tabulation, statistical analysis was conducted in order to test the three research questions.

No significant difference in attitudes toward computers was found among male and female undergraduate students. Male students (N=73) had a score of 4.06 (with a standard deviation of 0.696), and female students (N=70) had a score of 4.02 (with a standard deviation of 0.653).

It is interesting to note also that being currently enrolled in computer related classes did not have any influence on attitudes toward computers among the participants. Among those students taking a computer related class, thirty-six were male (score=4.31, $\sigma$=0.648) and thirty were female (score=4.04, $\sigma$=0.564). Thirty-seven males (score=3.82, $\sigma$=0.660) and forty females

(score=4.00, $\sigma$=0.719) indicated that they were not enrolled in any computer related class.

A comparison of data generated by answers from freshman, sophomore, junior, and senior students did not reveal any significant difference. The results are presented in Table 1.

Table 1. Comparison by Year in School

| | N | Score | Std.Dev. |
|---|---|---|---|
| FRESHMAN | | | |
| Male | 20 | 4.06 | 0.826 |
| Female | 23 | 4.02 | 0.746 |
| SOPHOMORE | | | |
| Male | 12 | 4.03 | 0.563 |
| Female | 19 | 3.84 | 0.653 |
| JUNIOR | | | |
| Male | 29 | 3.94 | 0.709 |
| Female | 16 | 4.16 | 0.573 |
| SENIOR | | | |
| Male | 12 | 4.39 | 0.479 |
| Female | 12 | 4.10 | 0.577 |

As general data information a comparison of male and female responses are presented in Appendix A, and a frequency analysis of all responses are presented in Appendix B.

## SUMMARY

Analysis of the data generated by this study permitted the elaboration of the following conclusions:

1. Regardless of gender and year in school, students seemed to have a positive attitude toward computers.
2. Students appeared to enjoy the idea of having computers in the classroom.
3. Students appeared to view the computer as an essential tool in our society.
4. Students seemed to like the idea of learning on a computer.
5. The results found in this study tended to agree with previous researches that found no significant difference between male and female students in their attitude toward computers.

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Appendix A
Comparison of Male and Female Responses

| | | Average | Std. Dev. |
|---|---|---|---|
| 1. I will use a computer as soon as possible. | | | |
| | Male | 4.16 | 0.986 |
| | Female | 4.00 | 0.948 |
| 2. I will take computer courses. | | | |
| | Male | 4.10 | 1.082 |
| | Female | 3.67 | 1.176 |
| (*) 3. Learning about computers is boring to me. | | | |
| | Male | 3.95 | 0.970 |
| | Female | 3.84 | 1.269 |
| 4. Computers can be used to save lives. | | | |
| | Male | 4.01 | 0.993 |
| | Female | 4.06 | 1.062 |
| 5. Computers make my life enjoyable. | | | |
| | Male | 3.79 | 1.054 |
| | Female | 3.63 | 1.009 |
| 6. I enjoy computer work. | | | |
| | Male | 3.82 | 1.097 |
| | Female | 3.84 | 0.845 |
| 7. Having computers in the classroom would be fun for me. | | | |
| | Male | 4.00 | 1.014 |
| | Female | 3.97 | 0.868 |

Appendix A
Comparison of Male and Female Responses (cont.)

| | Average | Std. Dev. |
|---|---|---|
| (*) 8. I would ne[illegible] take a job where I had to work with computers. | | |
| Male | 4.22 | 0.975 |
| Female | 4.41 | 0.985 |
| 9. If I had the money, I would buy a computer. | | |
| Male | 4.40 | 0.996 |
| Female | 4.37 | 0.951 |
| 10. I like learning on a computer. | | |
| Male | 4.16 | 0.943 |
| Female | 4.37 | 0.783 |

(*) Negative word construction.

Appendix B
Frequency Analysis

| Value | Frequency | Percent |
|---|---|---|
| 1. I will use a computer as soon as possible. | | |
| 1 | 1 | 0.70 |
| 2 | 5 | 3.50 |
| 3 | 40 | 27.97 |
| 4 | 32 | 22.38 |
| 5 | 65 | 45.45 |
| 2. I will take computer courses. | | |
| 1 | 8 | 5.59 |
| 2 | 7 | 4.90 |
| 3 | 33 | 23.08 |
| 4 | 40 | 27.97 |
| 5 | 55 | 38.46 |
| (*) 3. Learning about computers is boring to me. | | |
| 1 | 55 | 38.46 |
| 2 | 41 | 28.67 |
| 3 | 29 | 20.28 |
| 4 | 13 | 9.09 |
| 5 | 5 | 3.50 |
| 4. Computers can be used to save lives. | | |
| 1 | 5 | 3.50 |
| 2 | 4 | 2.80 |
| 3 | 30 | 20.98 |
| 4 | 46 | 32.17 |
| 5 | 58 | 40.56 |
| 5. Computers make my life enjoyable. | | |
| 1 | 3 | 2.10 |
| 2 | 11 | 7.69 |
| 3 | 51 | 35.66 |
| 4 | 36 | 25.17 |
| 5 | 42 | 29.37 |

Appendix B
Frequency Analysis (cont.)

| Value | Frequency | Percent |
|---|---|---|
| 6. I enjoy computer work. | | |
| 1 | 4 | 2.80 |
| 2 | 7 | 4.90 |
| 3 | 37 | 25.87 |
| 4 | 57 | 39.86 |
| 5 | 38 | 26.57 |
| 7. Having computers in the classroom would be fun for me. | | |
| 1 | 1 | 0.70 |
| 2 | 9 | 6.29 |
| 3 | 31 | 21.68 |
| 4 | 52 | 36.36 |
| 5 | 50 | 34.97 |
| (*) 8. I would never take a job where I had to work with computers. | | |
| 1 | 82 | 57.34 |
| 2 | 36 | 25.17 |
| 3 | 17 | 11.89 |
| 4 | 4 | 2.80 |
| 5 | 4 | 2.80 |
| 9. If I had the money, I would buy a computer. | | |
| 1 | 2 | 1.40 |
| 2 | 8 | 5.59 |
| 3 | 14 | 9.79 |
| 4 | 28 | 19.58 |
| 5 | 91 | 63.64 |
| 10. I like learning on a computer. | | |
| 1 | 2 | 1.40 |
| 2 | 3 | 2.10 |
| 3 | 19 | 13.29 |
| 4 | 50 | 34.97 |
| 5 | 69 | 48.25 |

(*) Negative word construction.

Appendix C
Attitudes Toward Computers

PART 1 - DEMOGRAPHIC DATA

1. Please check your gender:
   [___] Male [___] Female

2. Please check your year in College:
   [___] Freshman [___] Junior
   [___] Sophomore [___] Senior

3. What is your major: _____

4. Are you taking any computer related class this semester?
   [___] Yes [___] No

PART 2 - QUESTIONNAIRE(1)

Please circle the number that best describes your opinion about the following statements:

1. I will use a computer as soon as possible.
   5 4 3 2 1
   Strongly Agree Strongly Disagree

2. I will take computer courses.
   5 4 3 2 1
   Strongly Agree Strongly Disagree

3. Learning about computers is boring to me.
   5 4 3 2 1
   Strongly Agree Strongly Disagree

Appendix C
Attitudes Toward Computers (cont.)

4. Computers can be used to save lives.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

5. Computers make my life enjoyable.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

6. I enjoy computer work.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

7. Having computers in the classroom would be fun for me.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

8. I would never take a job where I had to work with computers.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

9. If I had the money, I would buy a computer.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

10. I like learning on a computer.

| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Strongly Agree | | | | Strongly Disagree |

(1) Reece, M.J. and Gable, R.K. (1982)