IMPROVING COMPUTER SELF-EFFICACY FOR FEMALE STUDENTS THROUGH COMPUTER BASED INSTRUCTION

SHELLEY OTT

To the Graduate and Research Council:

I am submitting hereafter a field study written by Shelley R. Ott entitled "Improving Computer Self-Efficacy For Female Students Through Computer Based Instruction." I have examined the final copy of this field study for form and content and recommend it to be accepted in partial fulfillment of the requirements for the degree of Educational Specialist, with a major in Special Education.

Dr. Larry Lowrance,
Major Professor

We have read this field study
and recommend its acceptance.

Dr. Ron Groseclose

Dr. Moniqueka Gold

Accepted for the Council:

Dean of the Graduate School

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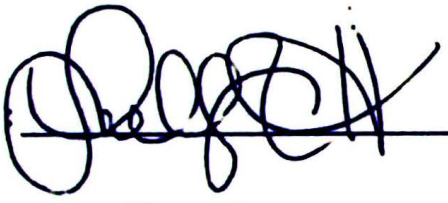
Signature: 

Date: May 8, 2001

IMPROVING COMPUTER SELF-EFFICACY FOR FEMALE STUDENTS THROUGH COMPUTER BASED INSTRUCTION

A Field Study Presented for the
Educational Specialist Degree
Austin Peay State University

Shelley Ott

May 8, 2001

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ABSTRACT

This research was designed to determine if students would exhibit more positive attitudes toward the computer after participating in a computer-based instructional activity.

The study group was composed of 38, 10th and 11th grade females. The students in the experimental group had access to a computer with Internet capabilities during the course of the study. The participants all completed a survey instrument designed to measure attitudes toward the computer, prior to computer exposure and immediately following it. Analysis of the data revealed that there were little differences in student attitudes.

Conclusions, generated from the study, suggest that there was little difference between pre and post-test attitudes. Students had rather positive attitudes toward the computer prior to the implementation of this study and were, therefore; limited in the degree of attitude improvement, given the limited duration of the study.

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CHAPTER I

INTRODUCTION

Integrating computers and technology into the curriculum has become more and more common in today's classrooms. Computer-based instruction is quickly becoming a key part of the teaching and learning process and an important educational delivery system due to the continued innovations of multimedia technology (Boles & Pillay, 1999). Most educators are interested in increasing their students' computer skills; however, developing positive attitudes toward computers may be an even more important goal (Divine & Wilson, 1997).

Positive attitudes toward the computer tend to facilitate the learning of computer skills. Positive attitudes give students the proper mental framework to facilitate the learning of future computer skills. Given the rapid pace of computer advances, the skills students learn now may be obsolete in just a few short years (Divine & Wilson, 1997). Students with positive attitudes will be more likely to adapt and learn the new skills to keep up with technological advances than those with negative attitudes (Divine and Wilson, 1997). Loyd and Loyd (1985) found that attitude toward computers is affected not only by anxiety, but also liking the

computer, finding the computer to be useful, and having the confidence to use the computer successfully.

Butler (2000) believes that educators must continuously explore the effect of increasing access to telecommunications and the Internet on girls' interactions with computers. Studies have indicated that females have a less favorable attitude toward computers than males (Todman & Dick, 1993). Further, when different age levels are compared, secondary students tend to have a more negative attitude toward the computer than elementary students (Todman & Dick, 1993). Educators should continue to pay careful attention to the issue of gender and computer technology in order to come closer to attaining a state of gender equity in an area that will probably dominate our learning in the 21st Century. (Butler, 2000).

The Problem

The use of technology (computers, the Internet, and multimedia programs, etc.) is of vital importance to the educational process for girls in today's society. Educators need to infuse the use of technology through assignments and projects that are technologically driven, thus requiring students to utilize computers.

Importance of The Problem

Over the last decade the world has become increasingly more technology oriented and driven. Males appear to dominate the field of technology as 70% of computer magazine ads show only males with machines, such as computers and electronic games (Wenninger, 1998). The Internet was developed by men and for men; but the percentage of women using the Internet has increased from a mere 25% in 1995 to 40% in 1997 (Wenninger, 1998).

Wenninger (1998) states that there is at least a perception of gender bias that is reinforced more and more as students get older. The early educational and other socialization of girls and boys appears to contribute to the perception of bias in the use of computers (Wenninger, 1998). Further, boys are 13 times more likely to have a computer available at home than girls, and although they are equally attracted to computers initially, male-oriented software and teaching approaches tend to turn girls off (Wenninger, 1998). Girls view computers as tools, not toys, and they tend to use them for problem solving. Computer and video games tend to be geared toward and enticing to males, as they can conquer and master the machine. In a survey of 150

boys and girls ages six to 17, the researcher found that playing games was the most common use of computers, with typing homework and Internet research next (Deloitte & Touche, 2000). The Deloitte and Touche study found that boys surpassed girls in all three of the identified areas. Further, 56% of the girls and only 36% of the boys spent less than two hours on the computer (Curriculum Administrator, 2000). Arenz & Lee (1990) state that most computer software, to include educational software, show male oriented images which are very competitive, warlike and aggressive. Girls are very social and prefer to be with people or use software such as word processing that they find useful (Wenninger, 1998).

Relationship of The Study to This Problem

Unless the gender gap is consciously closed, females lacking computer skills will soon be at an even greater disadvantage in jobs and society (Wenninger, 1998). Assigning females classroom projects that are technology based will require them to interact with computers and the Internet. As a result, they should become more proficient in the uses of the computer, thus becoming more technology oriented and confident in their abilities to use the computer effectively.

Preview

A selected sample of thirty-eight female 10th and 11th grade high school students will be compared to a control group to determine the effectiveness of the use of technology in the instruction of females across several curricular content areas. A pre and post-test design will be used to measure students' attitude toward computer usage. When the findings are compiled, recommendations will be made on the future use of technology driven projects in the classroom.

Hypothesis

1.) There will be no difference between the pre and post-test measure of computer self-efficacy for students who receive computer instruction.

2.) There will be no difference on the pre and post-test measure between the experimental and control group.

Definition of Terms

Computer self-efficacy: The feeling of being in control of the computer and being able to make a difference in its operation.

Computer attitude: The level of affect one has toward the computer.

Computer-based instruction: The use of the computer as the primary means of delivering instruction through the use of the Internet and software programs.

Limitations of The Study

There are several limitations to this study.

1.) In designing the current study, recognition was given to the fact that all participants will have differing entry levels of keyboarding skills and prior computer experience.

2.) Each student had access to a computer with Internet capabilities during the course of the study, thus eliminating any competition for computer time.

3.) The time frame of the study was limited because of time constraints; therefore, it may not yield the same results as a longer study.

4.) The sample was limited in scope to students in the 10^{th} and 11^{th} grade and may not yield the same results, as one would find with other grade level students.

5.) The study did not take into account the teachers' attitude and confidence level in relation to computer usage.

CHAPTER II

REVIEW OF THE LITERATURE

A study of 269,413 college freshmen completed a survey in which males were two times more likely to rate their computer skills as above average in comparison to women (Curriculum Administrator, 2001). Males were five times more likely to pursue careers in computer programming and they spent a great deal more time using the Internet in comparison to women (Curriculum Administrator, 2001). To date a great deal of interest has been exhibited in the literature relating to the effect of computers on students. Reforms in education require teachers to make full use of computer resources for student learning by integrating computers into the curriculum as much as possible. Former Secretary of Education, Richard Riley, stated that it is impossible to provide the kind of quality education that is called for in Goals 2000 without providing students access to new technologies (Riley, 1994). He further claimed that technology could individualize instruction, support teachers, connect students to the real world, and connect schools to the home and community (Riley, 1994). The increasing role of the Internet has lead to a shift away from interactive software. The Internet is not limited to

time and space, thus it is able to transport students to places which are much more exciting than their traditional classroom (Fisher, 1999).

Computers and access to the Internet is becoming a common feature of most American schools; however, technology alone does not make the difference in student performance. Teachers must feel comfortable and competent with technology in order to integrate it into the curriculum. Kulik and Kulik (1991) state that many educational technologists believe that computer-based instruction will enhance education, as well as, reduce educational costs over time. Fisher (1999) claims that students in schools that are integrating technology into the traditional curriculum have a higher attendance and lower drop out rate, which leads to an increase in academic success. Bialo and Livin (1991) state that computers are motivating because they give students the feeling of being in control and help to keep them on task.

Many articles and research cited indicate that computer use positively affects students' attitudes toward school and toward specific subjects. Kulik and Kulik (1991) reviewed nineteen studies in which students' attitudes toward computers were assessed. They found

that in 15 of the 19 studies the students that had contact with the computer had a more favorable attitude toward the computer (Kulik & Kulik, 1991). Arenz and Lee (1990) claim that past studies indicate that computer experience is positively related to attitudes and interest in computers; the better the experience, the more positive the attitude. A study by O'Connor and Brie (1994), noted that with technology, students are more motivated to learn, and they experience increased self-esteem and self-confidence. The American Association of University Women reported that 60% of the girls they studied had high self-esteem in elementary school; however, the percentage dropped to 29% by the time the girls reached high school (Anonymous, 1992). A follow up to that report was done by Butler (2000), in which she states that technology and gender inequality remains as alive today as it was in the 1980's and 1990's.

There appears to be a relationship between girls' self-esteem, attitude, motivation, and computers. Considering the importance of computers in our society today, it is important for girls to experience success with technology not only to build self-esteem but also increase career opportunities. Significant differences between males and females in self-confidence, attitude,

computer utility and sex bias tend to begin in the eighth grade (Arenz & Lee, 1990).

Young (2000) believes that the computer gender gap actually begins while children are young because both teachers and parents tend to act on their perception that computers are primarily male oriented. Arenz and Lee (1990) found that in assessing students' attitude toward computer, males not only had more self-confidence in computer use, but also more gender-stereotyped views about computers than females. Young (2000) conducted a study of 462 middle and high school students in which the perceptions of males and females was surveyed. The results indicated that males were more likely to view computers as a male domain while girls reported finding them more useful for school and careers (Young, 2000). In addition, girls indicated that they did not feel confident about their ability to use the computers (Young, 2000).

Sacks and Bellisimo (1994) revealed that when 25 high school students (14 boys and 11 girls) were given a pre and post-test computer attitude scale the girls' attitudes toward computers improved after having access to and using computers while the boys remained the same. Xiufeng, Macmillan, and Timmons (1998) conducted a study

on academic achievement and computer use in a middle-sized high school in Canada. They found that students continued to have a positive attitude at the completion of the study because those who had used the computers often still had the desire to use them and to learn more about them. Most teachers saw the benefits of computer integration and believed that overall the computers had a positive impact on their students.

Kulik and Kulik (1991) found that computer-based instruction tends to be more effective when limited to four weeks or less. Teachers may be more inclined to integrate computer-based instruction into their lesson plans with the knowledge that they can have a positive effect on students without using the computer all of the time. Of course, Kulik and Kulik (1991) are clear to point out that the Hawthorne effect may be the explanation for why a four-week or less time span has a greater positive effect on students.

Watters (2000) surveyed 139 undergraduate students in an auditing course to determine whether students preferred the traditional lecture type instruction or computer-based assignments. Although the students generally felt that they were supposed to be instructed through the lecture mode, the female students disliked

this method more than the male students. Male students indicated that they liked the computer-based assignments more than the female students did. Further 62% of the female students worked in groups when completing the computer assignments, compared with only 16% of males. This seems to indicate that females appear to be more uncomfortable with computers than males even at the undergraduate level. Arenz and Lee (1990) mention several factors that may create and reinforce the gender-related differences in computer use. These factors include the limited number of computers in school, the idea that computers are math or science related, male-oriented content features of software programs, social and family influence, career plans, and even school policies (Arenz & Lee, 1990). In a study by Owens and Waxman (1998), 15,577 tenth grade students were surveyed in science and math classes. The females reported that they were less likely to use computers in these classes in comparison to the males (Owens & Waxman, 1998). This finding is consistent with results from previous studies (Owens & Waxman, 1998).

Todman and Lawrenson (1992) state that the increase of computers in our society has created significant pressure on students to interact with them, yet some

students go to great lengths to avoid any dealings with computers. Given the use of computers across the curriculum, educators need to focus on changing students' stereotypical beliefs, as well as, their anxiety levels, confidence, and their computer experience, as these areas are detrimental to student success. Collis (1985) argues that females need to have experiences with computers that are specifically directed toward increasing self-confidence. Selwyn (1997) states that employers expect students who leave school to have technical abilities and that they will have fewer job opportunities if they have poor technology skills. Selwyn (1997) also claims that a basic outcome measure of students' computer use is their attitude toward computers. One of the major issues in schools across the country is ensuring that all students are prepared for today's more technologically advanced world (Owens & Waxman, 1998). In addition, technology must be equitably distributed across school systems to ensure that all students are afforded equal access (Owens & Waxman, 1998).

Summary

The review of the literature provides a basis for the evaluation of student attitudes toward computers. The studies indicate that female students tend to have

more negative attitudes toward computers than male students.

Many of the studies concluded that students' attitude became more positive following periods of computer-based instruction. Finally, female students appear to have greater computer self-efficacy following their use of the computer in a structured learning environment versus competitive learning environments. These factors appear to be important in the overall success of female students as they leave high school and enter their adult lives.

CHAPTER III

DESIGN AND METHODOLOGY

The Sample

The sample group was comprised of 38, 10th and 11th grade high school students. One teacher from English and one teacher from history were randomly selected to participate in the study. One English and one history class was designated as the control group while another English and history class was designated as the experimental group. The high school, grades 9-12, was located on a military installation with a diverse and transient student population of approximately 600. There are a total of seven English teachers and six history teachers. The average English class size is 17 and the average history class size is 19.

There were no identifiable risks to the subjects associated with the study. The students participating in this program maintained their daily routine at school with the exception of those in the experimental group who were required to go to the computer lab for one period throughout the study. All subjects remained anonymous in the tabulation of the final results.

The Procedure

Permission to conduct the study was obtained from The Human Subjects Committee of Austin Peay State University. Letters requesting permission to conduct the study were sent to the superintendent of the school district, the principal of the participating school, and the parents of the selected students. The parents of the students selected also received a letter explaining the purpose of the field study, subject anonymity, and the way the data collected will be used. Permission forms, indicating that participation in the study was completely voluntary and would in no way effect their child's grade, were attached. All participants returned a signed permission letter.

The students were given a pre and post-test designed to measure student attitudes toward computers. The test consisted of 20 randomly ordered questions with columns labeled: strongly agree; agree; unsure; disagree; and strongly disagree. During the study the experimental group worked at the computer for eight days, over a three-week period. Students were scheduled to work for 50 minutes during each computer session; approximately 450 minutes were completed at the computer. Students

worked individually on an IBM microcomputer throughout the three-week study.

The classroom teacher determined the unit of study, while the researcher and the computer lab teacher determined Internet sites. The software and Internet sites were selected by the computer lab teacher and the researcher to enhance the unit of study in each of the two classes. A post-test was administered to both the experimental and the control groups following the three weeks of computer use.

Instrumentation

There were 38 high school students who were administered the How Do You Feel About Computers attitude scale. Dr. J. Todman of Dundee University and Dr. Portia File of Dundee Institute of Technology, UK developed this instrument. The instrument measures the attitudes of high school students toward computers. A 5- point Likert scale was used to assess 20 items concerning computer usage. The items cover categories such as computer usefulness, importance, and ease of use. The pilot studies done to develop this instrument show an acceptable level of reliability (coefficient alpha = 0.82) and the evidence relating to its construct validity is encouraging (Todman & File, 1990). To measure the

concurrent validity, the scale was administered to university students immediately following the administration of a 20-item Likert scale questionnaire on attitudes. The correlation between scores on the two scales was 0.85 (Todman & File, 1990).

The scale only takes five to 10 minutes to administer and has been shown to be sensitive to picking up changes in attitudes following computing experiences (Todman & File, 1990). The students were assigned a random number in order for the researcher to assure anonymity.

Analysis of Data

The data generated were quantitative in nature. The attitudes of the students were described with a mean total attitude score. A *t*-test was calculated to determine if there is a significant difference between the pre and post-test items. Statistical data is presented in tabular form where relevant.

CHAPTER IV

ANALYSIS OF SURVEY RESPONSES

The instrument utilized for the purpose of this study was a twenty item attitude survey. Respondents consisted of thirty-eight female students attending the same high school. Nineteen of the students were given the survey in their English class, while the other nineteen were given the survey in their history class.

The data generated in this study consisted of the pre-attitude and post-attitude raw scores from the How Do You Feel About Computers Survey. The statements in the survey suggested that people either feel positively or negatively toward the use of computers. The twenty items were distributed evenly, thus ten of the questions reflected a positive attitude toward computers, while the remaining ten items reflected a negative attitude toward computers. The students were instructed to check each statement according to how strongly they agreed or disagreed with it. The answers ranged from 1 to 5. Marking a 5 indicated the student strongly agreed with the statement, while marking a 1 indicated the student strongly disagreed with the statement. The pre-attitude survey was given to all students the day before the experimental groups began utilizing the computer lab. The post-attitude survey was

given upon completion of the use of the computer lab. The pre and post-test scores were individually tabulated and mean scores were calculated. Overall pre and post-scores were averaged and compared. A t-test for the difference of means was calculated to see if relationships existed between the scores generated on the pre and post-attitude instrument.

The data from all four administrations of the instrument were averaged and compared. The scores of the two experimental group measures were tabulated and compared to the two control group measures.

Summary of the Data

Each item of the twenty item survey was calculated independently. The difference between the pre and post-survey was calculated and a t-test was used to compare the averages of each item. A critical value was determined to ascertain whether there was a statistically significant difference between the pre and post-item values.

According to the conditions of the t-test, the mean score on the post-attitude survey indicated that there was no significant difference in attitudes among participants. The data collected from the two English classes indicates that the item of most significance was item 14; computers make things easy to learn. The t-score for this item was

.4811 and the critical value was 1.74 (See Table 1). According to the conditions of the t-test, there is no statistical significance to this item.

TABLE 1

English Class

Control Group				Experimental Group			
	Pre	**Post**	**Difference**		**Pre**	**Post**	**Difference**
Mean	3.09	3.818	-0.727	Mean	3.625	4.375	-0.75
Std Dev	1.044	0.7507	1.1037	Std Dev	1.414	0.707	0.7071
t-value		.4811		t-value		.4811	
CV		1.74		CV		1.74	

The data collected from the two history classes indicates that the item of most significance was item 9; using a computer is more trouble than it is worth. The t-score for this item was .4930 and the critical value was 1.74 (See Table 2). According to the conditions of the t-test, there is no statistical significance to this item.

TABLE 2

History Class

Control Group				Experimental Group			
	Pre	**Post**	**Difference**		**Pre**	**Post**	**Difference**
Mean	2.2	2.3	-0.1	Mean	2	2.111	-0.111
Std Dev	0	0	0	Std Dev	1.414	0.7071	2.1213
t-value		.4930		t-value		.4930	
CV		1.74		CV		1.74	

The data collected from both control groups and experimental groups was then combined. The difference between the pre and post-survey was calculated and a t-test was used to compare the averages of each item. A critical value was determined to ascertain whether there was a statistically significant difference between the pre and post-item values.

According to the conditions of the t-test, the mean score on the post-attitude survey indicated that there was no statistical significant difference in attitudes among participants. The data collected from all classes indicate that the item of most significance was item 14; computers make things easy to learn. The t-score for this item was

.4728 and the critical value was 1.697 (See Table 3). According to the conditions of the t-test, there is no statistical significance to this item.

TABLE 3

English/History Class

Control Group				Experimental Group			
	Pre	**Post**	**Difference**		**Pre**	**Post**	**Difference**
Mean	3.6666	3.809	-0.1429	Mean	3.8823	4.0	0.1176
Std Dev	1.033	0.4982	1.6286	Std Dev	0.6103	0.625	0.9853
t-value		.4728		t-value		.4728	
CV		1.697		CV		1.697	

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The primary purpose of this study was to determine if female students exhibited more positive attitudes toward computers after being exposed to computer-based instruction. Participants involved in the study were 10th and 11th grade female students attending a high school located on a military base. All students enrolled at this school were sons and daughters of members of the armed forces. The use of two content area classes permitted a comparison among courses.

The review of related research materials and literature supported the use of computer-based instruction for improving students' attitudes toward computers. The studies concluded that girls tended to have more negative attitudes toward computers and are less likely to use computers than males. In addition, girls' attitudes generally become increasingly more negative as they age.

Conclusions

Based on the analysis of the data, the following conclusions, related to the relationship between pre and post-attitudinal survey findings are drawn.

1. The study results support the hypothesis, as significant differences in attitude were not exhibited. The null hypothesis is accepted.
2. The initial attitudes of the students in both classes were not as negative to begin with as the researcher anticipated. This may be due to the fact that the school district in which the study occurred is very well equipped with current technology.
3. The students were much more skillful in utilizing the computer than the researcher anticipated. This was possibly due to their exposure in their current school district.
4. The classroom teachers, both females, displayed a highly positive attitude toward the use of the computer as a learning device following the study.
5. There was very little difference noted in pre and post-test scores from both groups, likely attributable to the previously noted positive attitudes of these girls on the pre-test. This high score would make it unlikely to get significant gain scores.

Recommendations

A longitudinal study on the effects of computer-based instruction on the attitudes of female students would provide important results.

There may be a value in looking at demographics in a future study, noting how much previous experience students have with computers. The nature of the data collected in this study makes it impossible to ascertain how carefully students read and responded to the items. Future studies should control for this factor.

The teachers' attitude toward computers was not determined prior to the study nor was their gender taken into account. There may be a significant value in incorporating these factors into a future study.

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APPENDICES

LETTERS OF CONSENT

APSU
Box 4545
Clarksville, TN37044

5 January 2000

Dear Parents,

Over the course of the next three weeks the English teacher will be administering an assessment tool which simply relays information about attitudes toward technology. Each student will be given a 20-item attitude assessment, in which they will respond to various computer-related questions with responses ranging from "strongly agree" to "strongly disagree." Each student will be assigned a random number to place on the assessment to ensure anonymity. The assessment will only take about 10 minutes to administer.

There are no risks to the students anticipated in this study. Participation in the study will have no effect on your child's grade in the class nor will participation in the study affect the nature or quality of instruction your child receives. Participants in the study may withdraw, without a penalty, at any time during the study.

I am seeking your permission to use your child's assessment results for my research. The information from this research will be compiled and a final product will be in the form of a written Field Study available to students and the public through Woodward Library at APSU. There will be no identifying information associated with any of the test results reported in my research.

If you have any questions about the research study, please feel free to contact either of us at any time. Questions about research participants' rights may be directed to the Office of Grants and Sponsored Research, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881. Thank you very much for your consideration in this matter.

Sincerely,

Dr. Larry Lowrance
Professor
APSU
221-6153

Shelley Ott
Ed.S. Candidate
APSU
431-5056

Please return this form to your child's teacher.

____Yes, I give permission for the English teacher to release technology assessment scores; referred to above, to Shelley Ott for use in her research project.

_____ No, I don't give permission for the English teacher to release technology assessment scores; referred to above, to Shelley Ott for use in her research project.

Child's Name_____

Parent Signature_____ Date_____

APSU
Box 4545
Clarksville, TN 37044

5 January 2000

Dear Parents,

I am currently a teacher at Fort Campbell High School. I am also taking classes at Austin Peay State University in hopes of graduating (in May 2001) with an Education Specialist Degree. A final requirement for this degree is to conduct a field study. I am interested in female students' attitudes toward the computer, as males tend to dominate technology. I am planning to work with your child's English teacher and the computer technician, to enhance a unit of study with various computer-based activities. All students in the class will be exposed to the computer lab and complete assessment material to evaluate the effectiveness of the computer instruction, regardless of whether their data is used for my research project.

Each student will be given a 20-item attitude assessment, in which they will respond to various computer-related questions with responses ranging from "strongly agree" to "strongly disagree." The assessment will only take about 10 minutes to administer. The computer lab will be used **only** to **enhance** the unit of study, chosen by the English teacher. I am interested in finding out if using the computer lab makes a difference in students' attitudes toward technology and whether there are noticeable differences in the attitudes of males and females.

There are no risks to the students anticipated in this study. Participation in the study will have no effect on your child's grade in the class nor will participation in the study affect the nature or quality of instruction your child receives. Participants in the study may withdraw, without a penalty, at any time during the study.

I am seeking your permission to use your child's assessment results for my research. The information from this research will be compiled and a final product

will be in the form of a written Field Study available to students and the public through Woodward Library at APSU. There will be no identifying information associated with any of the test results reported in my research.

If you have any questions about the research study, please feel free to contact either of us at any time. Questions about research participants' rights may be directed to the Office of Grants and Sponsored Research, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881. Thank you very much for your consideration in this matter.

Sincerely,

Dr. Larry Lowrance
Professor
APSU
221-6153

Shelley Ott
Ed.S. Candidate
APSU
431-5056

Please return this form to your child's teacher.

_____ Yes, I give permission for the English teacher to release technology assessment scores; referred to above, to Shelley Ott for use in her research project.

_____ No, I don't give permission for the English teacher to release technology assessment scores; referred to above, to Shelley Ott for use in her research project.

Child's Name_____

Parent Signature_____ Date_____

APSU
Box 4545
Clarksville, TN 37044

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Parent Signature_____ Date_____

APSU
Box 4545
Clarksville, TN 37044

5 January 2000

Dear Parents,

Over the course of the next three weeks the history teacher will be administering an assessment tool which simply relays information about attitudes toward technology. Each student will be given a 20-item attitude assessment, in which they will respond to various computer-related questions with responses ranging from "strongly agree" to "strongly disagree." Each student will be assigned a random number to place on the assessment to ensure anonymity. The assessment will only take about 10 minutes to administer.

There are no risks to the students anticipated in this study. Participation in the study will have no effect on your child's grade in the class nor will participation in the study affect the nature or quality of instruction your child receives. Participants in the study may withdraw, without a penalty, at any time during the study.

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Child's Name_____

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LETTERS OF ASSENT

APSU
Box 4545
Clarksville, TN 37044

5 January 2000

Dear Student,

I am currently a teacher at Fort Campbell High School. I am also taking classes at Austin Peay State University in hopes of graduating (in May 2001) with an Education Specialist Degree. A final requirement for this degree is to conduct a field study. I am interested in female students' attitudes toward the computer, as males tend to dominate technology. I am planning to work with your English teacher and the computer technician, to enhance a unit of study with various computer-based activities. All students in the class will be exposed to the computer lab and complete assessment material to evaluate the effectiveness of the computer instruction, regardless of whether their data is used for my research project.

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Please return this form to your teacher.

I understand this is the research that my parents have given permission for me to participate in. I also understand that my participation is voluntary, and that there will be no negative consequences if I choose not to do so. I understand that I can quit at any time, or leave out any items I choose not to answer.

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Student's Name_____Date_____

LETTERS OF APPROVAL TO CONDUCT RESEARCH

DoDEA-R 2071.2
Enclosure 2

Superintendent/Principal(s) Approval

I have reviewed the *Research Study Request* for Improving Self-Efficacy for Female Students Through Computer Based Instruction (Shelly Ott)
entitled:

I *agree/disagree* (circle one) that my school will participate in this research study. I also understand that given my approval, this research will be conducted in accordance with DoDEA policy.

Date: 12-12-00 School Name: Fort Campbell High School

Principal's Name: J. Kenneth Kilbourn

Principal's Signature: J. Kenneth Kilbourn

Please forward this request to your Superintendent after completion of this form.

The following should be completed by the Superintendent:

I *agree /disagree* (circle one) that my school will participate in this research study. I also understand that given my approval, this research will be conducted in accordance with DoDEA policy.

Date: 12-23-00

Superintendent's Name: Gary C. Miller

Superintendent's Signature: G. C. Miller

The following should be completed by the Principal and/or Superintendent.

If you disagreed above, please state your reasons below.

Superintendents: Return to the DoDEA: Chief, Research and Evaluation Branch
Fax: 703 696-8924

Form 2071.24 (pending OMB Forms approval)

Permission To Use Instrument

Ott, Shelly

From: John Todman [j.todman@dundee.ac.uk]
Sent: Friday, October 27, 2000 3:22 AM
To: Ott, Shelly
Subject: RE: Computer attitude scale

Dear Shelly,
This is to confirm that you are welcome to use the computer attitude scale I sent you. John

On 26 Oct 00, at 11:34, Ott, Shelly wrote:

> Dr. Todman,
>
> Thanks so much for sending the information. I've found it very
> helpful in writing my review of the literature. Could you send me an email
> stating that I have your permission to use the instrument so that I can
> prove to the graduate office that I've been in touch with you?
> Thanks,
>
> Shelley
>
> -----Original Message-----
> From: John Todman [mailto:j.todman@dundee.ac.uk]
> Sent: Wednesday, October 11, 2000 6:56 AM
> To: SOtt@fced.org
> Subject: Computer attitude scale
>
>
> Hi Shelly, If you give me your address I'll send the scale by air mail
> - I don't have an electronic version. I'll be away for a week after
> tomorrow - if I get your address today or tomorrow, I'll send the
> scale right away, otherwise you'll have to wait for a week. You are
> certainly welcome to use it. John

HOW DO YOU FEEL ABOUT COMPUTERS?

For each of the statements below, put a tick in one of the boxes to show how strongly you agree or disagree with it.

Please answer quickly with you first reaction to each statement, and use the 'UNSURE' box as little as possible.

Question	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Computers are threatening.					
Computers stimulate learners to think for themselves.					
Computers are unfriendly.					
Every home should have a computer.					
It's easier to answer truthfully when a question is asked by a computer.					
The computer allows personal feedback to the user.					
It is easy to learn to operate a computer.					
Computers are stupid.					
Using a computer is more trouble than it is worth.					
Computers are complicated to use.					
Computers are frightening.					
Computers make learning fun.					
Computer games are exciting.					
Computers make things easy to learn.					
Computers take over from people.					
There is not a lot of use for computers.					
Computers control people.					
Computers are fun.					
Computers are over-rated as a means of teaching people.					
Computers make people think more about the topics they are learning.					

VITA

Graduate School

Austin Peay State University

Name: Shelley Regina Ott

Home Address: 2118 S. Virginia Street, Hopkinsville, KY, 42240

Education

I. University of Wisconsin, Waukesha, WI
Associate of Arts and Science, May 1993

II. University of Wisconsin, Whitewater, WI
Bachelor of Science in Education, Magna Cum Laude, May 1995
Major: Special Education

III. Troy State University, Troy, AL
Master of Science in Special Education,
Summa Cum Laude,
June 1998
Major: Special Education

Certificate

Kentucky State K-12 Teaching Certificate
Alabama State M-12 Teaching Certificate
Professionally Recognized Special Educator (PRSE)