THE EFFECTS COMPUTER UTILIZATION AND COMPUTER CONFIDENCE HAVE ON TECHNOSTRESS LEVELS IN UNIVERSITY STUDENTS

JENNIFER LYNN ROESKE

To the Graduate Council:

I am submitting a thesis written by Jennifer Lynn Roeske entitles "The Effects Computer Utilization and Computer Confidence Have on Technostress Levels in University Students." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Industrial/Organizational Psychology.

Dr. Anthony Golden, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

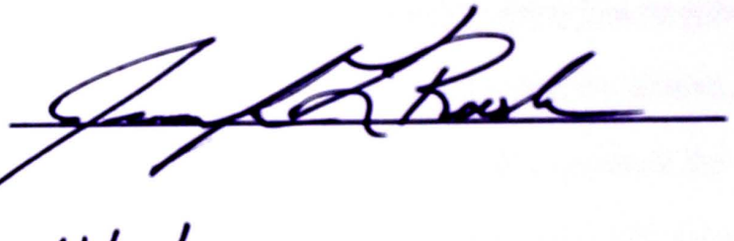
Parris R. Watts

Dean to The Graduate School

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a Master of Arts as Austin Peay State University, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from this thesis are allowed without special permission, provided that accurate acknowledgment of the source is made.

Permission for extensive quotation from or reproduction of this thesis may be granted by my major professor, or in his absence, by the Head of Interlibrary Services when, in the opinion of either, the purposed use of the material is for scholarly purposes. Any copying or use of the material in this thesis for financial gain shall not be allowed without my permission.

Signature: 

Date: 4/2/02

The Effects Computer Utilization and Computer Confidence Have on Technostress Levels in University Students

A Thesis

Presented for the

Master of Arts

Degree

Austin Peay State University

Jennifer Lynn Roeske

May, 2002

DEDICATION

This thesis is dedicated to my mother Linda,

Sisters Jessica and Julie,

And my grandma Bessie.

You have given me the courage to take flight and

Dare to go for my dreams.

You are my guardian angels,

Your wings may be hidden,

But through your support I have reached the stars and beyond.

I love you more than you will ever know.

ACKNOWLEDGMENTS

I would like to thank my major professors, Dr. David Denton, and Dr. Anthony Golden for their time, guidance, and support over the past two years. I would also like to thank my other committee members, Dr. Charles Grah, Dr. Uma Iyer, and Dr. Thomas Timmerman, for their assistance and suggestions. I would like to express my thanks to my mother, Linda, your strength and constant support has helped me to reach goals that no one else thought possible. Also to my sisters, and Nana, who helped me to remember that no matter what people tell you, it is your dreams that you must ultimately obey, for they will never lead you astray. Finally, I would like to thank my husband Randy, for the love that he has given to me so unconditionally; you are my rock and hope for the future.

ABSTRACT

The purpose of this study was to determine if there was a measurable way to identify those factors that influence university students' technostress levels. Having identified such factors, changes in the nature of a person's interaction with computers could be recommended that might minimize stressful reactions.

For the purpose of this study, data derived from the Computer Hassles Scale, the Computer Attitudes Scale for Confidence, and demographics questionnaires were utilized. Participants included students from Austin Peay State University's main campus and Fort Campbell Center. Statistical analyses were performed on the data.

The amount of time that a university student used a computer had no significant correlation with how stressed they felt about using computers. At the same time however, the more confidence a student felt with using computers had a significant effect on lowering their technostress levels. These two variables were significantly correlated with each other.

TABLE OF CONTENTS

LIST OF TABLES

TABLE PAGE

CHAPTER I

INTRODUCTION

In recent years, both educational institutions and industries have recognized that technology has become an essential part of our everyday lives. Educational administration boards, such as the Tennessee Board of Regents, have made computer competency courses mandatory for graduation from state funded colleges and universities. From e-mail to word processing, from graphics design to training, computers are as fundamental to our present day education and work environments as were pen and paper in past years. Nothing is hassle free; computer systems become slow, go down all together, and need to be constantly updated (Balance and Rogers, 1991). For some, the language associated with computers is just plain confusing (Kernan and Howard, 1990). Brod (1984) deemed people's adverse reactions to computer related stressors, "technostress."

> "Technostress is a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner. It manifests itself in two distinct and related ways: 1) a struggle to accept computer technology, and 2) in a more specialized form of over identification with computer technology. Anxiety is the primary symptom of those who experience technostress. This anxiety is expressed in many ways: irritability, headaches, nightmares, resistance to learning about computers, and even outright rejection of the technology" (Brod,1984, p16).

Technostress is seemingly a type of acute stress, one of the most common forms of stress. Acute stress is associated with the demands and pressures of the recent past and

the anticipated demands and pressures of the near future, according to an on-line article posted by the American Psychological Association which sites Miller and Smith (1997) as contributing authors. One of the most common symptoms of acute stress, like those of technostress, is emotional distress – some combination of anger or irritability, anxiety, and depression. This stress is characteristically felt on a short-term basis, and is highly treatable and manageable.

There are a number of variables associated with technostress. For example, researchers Cambre and Cook (1987) reviewed a number of articles which reported that in most individuals computer anxiety was lessened by exposure to computers. Smith, Caputi and Rawstorne (2000) found, among other things, that the amount of computer experience and opportunity to use computers had a significant negative correlation with anxiety/frustration. Coffin and MacIntyre (1999) found that previous experience with computers was an important factor in determining self-efficacy with regards to computers. Similarly, Salanova, Grau, Cifre, and Llorens (2000a) who investigated the moderating role of computer self-efficacy in the relationship among computer training, frequency of usage and burnout, found that computer exposure (i.e. frequency of usage and computer training) is positively associated with computer self-efficacy. Other research suggests that self-efficacy is an important variable in the stress process (Bandura, 1997). Given these findings, it can be argued that the amount of computer utilization will be negatively correlated with the amount of technostress

Another factor that may be related to one's level of technostress is the level of confidence one feels when using a computer. Harrison and Rainer (1992) pointed out three main causes for resistance towards computers: negative attitudes towards

computers, anxiety toward computer use, and low computer self-efficacy. Computer confidence is a type of computer attitude that was measured by Loyd and Gressard (1986) via the Computer Attitudes Scale. Computer confidence refers to the confidence in one's ability to use or learn about computers (Loyd and Gressard, 1986). Computer confidence was shown to be inversely related to computer anxiety such that greater levels of computer confidence were associated with lower levels of computer anxiety (Loyd and Loyd, 1985). One of those computer attitudes measured was computer confidence. Like computer utilization in previous studies, computer confidence was found to be positively correlated with computer self-efficacy. As stated above, research suggests that self-efficacy is an important variable in the stress process (Bandura, 1997). Given these findings, one could argue that the level of confidence experienced with computers will be negatively correlated with technostress.

Thomson, Higgins and Howell (1991) showed that computer utilization is a significant predictor of computer confidence. Loyd and Gressard (1984) found that persons with more experience show significantly higher levels of computer confidence, computer liking, and lower anxiety, than those with less experience. Shashaani (1994) reported that computer usage was positively related to computer interest, computer confidence, and perceived computer utility. Also, Salanova and Schaufeli (2000) found that the higher the exposure to computers, the more positive the appraisal and the lower the burnout levels (less cynicism, more self-confidence and a greater sense of goal attainment) that were reported. Pope-Davis and Vispoel (1993) found that individuals who received training demonstrated less anxiety, more confidence, and more interest in using computers than those individuals who received no training. Given these findings, it

can be logically argued that the greater the amount of computer utilization, the greater the likelihood that student will report high levels of computer confidence.

Scales Used

Computer Hassles Scale: Richard Hudiburg developed the original Computer Technology Hassles Scale, a 71-item measure of computer-related stress or technostress in 1989. Evidence to support the convergent and discriminate validity of the scale can be found in a number of studies (Balance and Balance, 1992, 1993 ; Balance and Rogers, 1991; Hudiburg, 1989, 1991, 1992). A revised version was developed in 1992 by Hudenburg, Sides, and Jones. This revised version, the Computer Hassles Scale, was derived from a factor analysis done by Hudenburg, Sides and Jones (1992). Evidence to support the convergent validity of the scale can be found in the study done by Hudenburg, Ahrens, and Jones (1994).

Computer Attitudes Scale: Loyd and Gressard developed the Computer Attitudes Scale in 1984, to be used as a convenient, reliable and valid measure of computer attitudes. The CAS is a Likert-type instrument, which consists of 30 statements divided into 3 subscales: computer anxiety, computer confidence, and computer liking. Evidence to support the validity of the Computer Attitudes Scale can be found in a number of studies (Loyd and Gressard, 1986; Woodrow, 1991).

Summary

The purpose of this study is to determine if there is a measurable way to identify the factors that influence university students' technostress levels. Should such factors be identified, changes in the person's interaction with computers could be recommended that might minimize stressful reactions.

Hypotheses

Hypothesis 1: The amount of computer utilization will be negatively correlated with the amount of technostress.

Hypothesis 2: The level of confidence experienced with computers will be negatively correlated with technostress.

Hypothesis 3: The level of computer utilization will be positively correlated with computer confidence.

CHAPTER II

METHOD

Participants:

Fifty-two students from Austin Peay State University, who attend classes either at the Main Campus or the Fort Campbell Center, participated in this study, (ages ranged from 18-50). Proof of participation was given to each participant at the end of the study. Participants presented this documentation to their professors to be used as extra credit at the professor's discretion. Demographic characteristics are provided in Table 1. Seventy-five percent of the participants were between 18 and 30 years of age. Ninety percent of the participants were reportedly undergraduates at the university while 10% reported being graduate students. There was a wide range of majors reported; of those, 15% were psychology majors and another 8% were Nursing majors. Sixty three percent of the participants were female.

Table 1

Demographic Characteristics of the Sample

Characteristics	n	%
Age at time of survey (years)		
22 or less	19	36.5
23 – 25	8	15.4
26-30	12	23.1
31-35	5	9.6
36-40	3	5.8
41-45	2	3.8
46-50	3	5.8

Table 1 (continued)

Characteristics	n	%
College Level Completed		
1st year	15	29.4
2nd year	15	29.4
3rd year	8	15.7
4th year	7	13.7
Masters	1	2.0
Doctorate	0	0
Have not completed 1st year yet	2	3.9
Gender		
Male	19	36.5
Female	33	63.5

Measures

Technostress. This study used a shortened, more computer specific, revised version of the original Computer Technology Hassles Scale developed by Hudiburg, Sides and Jones (1992). The revised scale, The Computer Hassles Scale, yields scores for, Severity of Hassles, Computer Runtime Problems, and Computer Information Problems.

For this study, only the Severity of Hassles score was used. Participants were asked to indicate which hassles affected them over the two-month period immediately prior to the study. Of those hassles identified, the participants were asked to rate each on its severity level. The severity level is a graded 4-point scale with the following values and labels: 0 – not at all, 1 – somewhat severe, 2 – moderately severe, and 3 – extremely severe. The Severity of Hassles score is the sum of the severities of the 37 possible hassles checked on the Computer Hassles Scale.

Computer Utilization. Computer utilization was measured by asking students how often they used computers. Utilization was scored as the total number of hours of computer use a month indicated by the participants.

Computer Confidence: Computer confidence was measured using the confidence subscale of the Computer Attitudes Scale (CAS) developed by Loyd and Gressard (1986). The CAS is a Likert-type instrument, which consists of 30 statements divided into 3 subscales: computer anxiety, computer confidence, and computer liking. Statements are rated on a scale of; strongly agree, slightly agree, slightly disagree, and strongly disagree. This study utilized the 10 statements that measure computer confidence only. Students were asked to indicate how agreeable they found the ideas expressed in each statement.

Procedure

Participants were given a packet, which contained an informed consent form, the Computer Hassles Scale, the CAS-confidence scale, and a demographics sheet that contained the item measuring computer utilization. To protect participant privacy, a box was provided for the collection of all returned questionnaires.

CHAPTER III

RESULTS

Of the 52 students that participated in the study, only 51 scores were used in the final analysis due to one participant's failure to complete the series of questionnaires. For this study, the Computer Hassles Scale-Severity (used to measure technostress) had a mean of 40.57 (SD=25.61) which was higher than that reported by Hudiburg, (1992) (M=25.2, SD= 22.9). The Computer Attitude Scale for confidence had a mean of 31.86 (SD=6.45), and computer utilization had a mean of 86.82 (SD=104.23).

Pearson correlation coefficients were calculated to determine the relationships among the three variables. Computer utilization was not significantly correlated with technostress ($r = .003$, $p > .05$). However, computer confidence showed a significant negative correlation with technostress, ($r = -.30$, $p < .05$). Computer utilization was also positively correlated with computer confidence, ($r = .29$, $p < .05$).

Though not a part of the original study's hypothesis, Pearson correlation coefficients were also calculated to determine if gender may have had any bearing on the results. In males, computer confidence showed a significant negative correlation with technostress, ($r= -.704$, $p < .003$). In females, there were no significant correlations found, though there would seem to be a slight positive correlation between computer utilization and computer confidence, ($r = .370$, $p < .1$).

CHAPTER IV

DISCUSSION

The purpose of this study was to identify those factors that influence university students' technostress levels. It was suggested in the first hypothesis, that the amount of computer utilization would be negatively correlated with the amount of technostress that the university students would report. According to the results of this study, this hypothesis was not supported. This may have been due to the way that the utilization was measured. In the current study, computer utilization is an open measure, with no anchors for the participants to choose from. Perhaps if more standardized anchors were used such as: 0 to 20 hours per month, 21 to 40 hours per month, etc., the responses would show more consistency and give more reliable results.

Both Hypothesis 2 and Hypothesis 3 were supported by the findings of this study. Hypothesis 2 suggested that computer confidence would be negatively correlated with technostress. While Hypothesis 3 suggested that the level of computer utilization would be positively correlated with computer confidence. These findings imply that the amount of time that a university student uses a computer has no significant effect on how stressed they feel about using computers.

It is possible that these findings involving computer utilization were skewed due to the measure that was used to collect the data. It is also possible that a better measure for computer utilization would render different results. Looking at the type of computer use that the participants engaged in and their effect on computer confidence of instead of looking at the amount of computer utilization, may give different results. The types of computer use may include playing a computer game, learning to write a program, word

processing, and even surfing the Internet. Researchers Leso and Peck (1992) suggest that exposure to a programming course, for example, did not reduce computer anxiety, while Gayle and Thompon (1995) advocate that both the amount and type of computer exposure are linked to lowering the levels of computer anxiety.

The results of this study suggest that the more confidence a student feels with using computers the less technostress they will experience. This implies that the more a student believes that they are capable of performing computer related tasks, the less acute stress they will feel should a computer problem arise. A view is offered by Bear, Richards, and Lancaster (1987) that supports the critical importance of promoting a positive attitude toward computers, and indicates that if students develop favorable attitudes, other objectives of computer literacy (knowledge of the capability, limitations, applications, and implications of computers) will become secondary. By effectively supporting the students' confidence in their ability to perform well with computers, an instructor can aid making future experiences with computers less cumbersome and thus less stressful.

Although these two variables have different relationships with technostress, they are significantly correlated with each other. This supports the findings by Al-Khaldi and Al-Jabri (1998) who looked at the relationship between university students' attitudes towards computers (computer confidence, anxiety, liking, and usefulness) and their computer utilization. Al-Khaldi and Al-Jabri found that one of the strongest predictors of computer utilization was computer confidence.

The more confidence a computer user in their own ability to use and comprehend computers, the less technostress he/she will feel. Also, in order to possibly increase one's

confidence level, it may be beneficial to use computers more often and in a greater variety of ways. Successfully utilizing computers both at home and at work with different programs may help to increase the users confidence in their abilities and enable them to feel less stressed during there interactions with computers in the future. With less stress and frustration associated with computer use, we may possibly see more productive human/computer interaction in the workplace and at home.

Limitations

There are several things that seem to have limited the findings of this study, the first being the relatively small sample size. Had the sample size been larger the results may have been more representative of the total university population. A second perceived limitation was the way in which computer utilization was measured. It would seem that a better way of measuring would have been beneficial. As the question was open ended, the responses were widely ranged (0 - 400 hours a month). In the future, a Likert-type scale may be used in order to set anchors for the computer unitization scale. This would allow for easier scoring and would give participants realistic points to gage their computer use.

Another limitation to this study is the way in which technostress was measured. Some of the statements (hassles) seem to be somewhat technical in the way in which they are worded. This wording could cause participants was are not familiar with the technical terms associated with computers, to become confused, thus threatening the validity of the measure. Also, some of the statements are somewhat outdated and obscure, such as keyboard lock-up, and slow programming speed. Today's programs are usually faster than the computers they are run on, also many of these programs have

timed backup systems, which somewhat alleviates the problem of lost data due to power surges.

Future Directions

In the future, it may be of interest to look at a population outside of the university setting. It would be interesting to see if the working population would reveal similar results. Another avenue would be to look at two separate populations within the working world. Perhaps researchers will look at computer experts vs. the general corporate population. In a recent article, Hudiburg (2000) announced that he had developed a revised version of the Computer Hassles Scale, this one looks at the stress levels of internet users. Also, it would be interesting to look at whether there is a difference in the personal vs. the technical aspects of technostress. It may also be beneficial to look at people's reactions to computer based training in reference to technostress.

Though not a part of the original hypotheses for this study, the relationship between gender and technology was investigated. The literature suggests that gender could have mitigating effects on variables like self-efficacy and computer utilization. Studies such as those done by Gressard and Loyd, (1987,1984), reportedly have found that males have more positive attitudes towards computers than do females. These reports in conjunction with the findings in this study bring forth more questions about the relationship that gender differences may have on technology based research. Could a person's gender determine whether or not they do well with computer-based training? Is there a difference in the way each gender uses computers and their overall confidence in that use?

Its difficult to determine at this time where technostress research will go, one thing is for certain; computers will remain a large part of our everyday lives. Perhaps one day we will build a computer system that has no glitches, and doesn't allow us to shut it down without saving our work first. But until that day we must learn to cope with technostress and anything else that may come our way. We need to understand our reactions to technology, and find ways to expand that understanding into new and more diverse ways of dealing with the never-ending challenges we face.

LIST OF REFERENCES

LIST OF REFERENCES

Al-Khaldi, M.A. and Al-Jabri, I.M. (1998). The Relationship of Attitudes to Computer Utilization: New Evidence Form a Developing Nation. *Computers in Human Behavior, 11(1),* 23 – 42.

Balance, C. T. and Balance, V. V. (1992). Psychology of Computer Use: XXVI. Computer –related Stress and In-class Computer Usage. *Psychological Report, 71*, 172 - 174.

Balance, C. T. and Balance, V. V. (1993). Psychology of Computer Use: XXVI. Relating Self-rated Computer Experience to Computer Stress. *Psychological Report, 72(2)*, 681-682.

Balance, C.T. and Rogers, S.V. (1991). Psychology of Computer Use: XXIV. Technostress Among Technical College Students. *Psychological Reports, 69,*_539 - 542.

Bandura, A. (1997). *Self-efficacy: The Exercise of Control.* New York: Freeman.

Bears, G. G., Richards, H. C., and Lancaster, P. (1987). Attitudes Towards Computers: Validation of a Computer Attitude Scale. *Journal of Educational Computing Research, 3*, 207 – 218.

Brod, C., (1984). *Technostress: The Human Cost of the Computer Revolution.* Reading, MA: Addison-Wesley.

Busch, T. (1995) Gender differences in Self-Efficacy and Attitudes Towards Computers. *Journal of Educational Computing Research, 12(2),* 147-158.

Camber, M.A., and Cook, D.L., (1987) Measurement and Remediation of Computer Anxiety. *Educational Technology, 12*, 15-20.

Chau, S. L., Chen, D., and Wong, A. F. L., (1999) Computer anxiety and its correlates: a meta-analysis. *Computers in Human Behavior, 15*, 609-623.

Coffin, R. J., and MacIntyre, P. D. (1999) Motivational Influences on Computer-related Effective States. *Computers in Human Behavior, 15*, 549-569.

Hudiburg, R. A., (1989a). Psychology of Computer Use: VII. Measuring Technostress: Technostress. *Psychological Reports, 64*, 767 – 772.

Hudiburg, R.A. (1989b). Psychology of Computer Use: XVII. The Computer Technology Hassles Scale: Revision, reliability, and some correlations. *Psychological Report, 65(3, Pt 2)*, 1387-1394.

Hudiburg, R. A., (1992) Factor Analysis of the Computer Technology Hassles Scale. *Psychological Reports, 71*, 739 – 744.

Hudiburg, R. A., Sides, B., and Jones, T. M. (1992) *The Computer Hassles Scale: Preliminary Psychometric Properties*. Paper presented to the Alabama Academy of Science, Tuscaloosa, AL.

Hudigurg, R. A. (2000) Hassles On the Internet: Revision of the Computer Hassles Scale. *Journal of the Alabama Academy of Science*, 43.

Gayle, A., and Thompson, A. (1995). Analysis of the Effect of Networking on Computer-Assisted Collabarative Writing in a Fifth Grade Classroom. *Journal of Educational Computing Research*, 12, 65-75.

Jordan, E.W., and Stroup, D.F., (1982) The Behavior Antecedents of Computers Fear. *Journal of Data Education, 22*, 7-8.

Kernen, M. C., and Howard, G. S., (1990) Computer Anxiety and Computer Attitudes: An Investigation of Costrust and Predictive Validity Issues. *Educational and Psychological Measures, 50,* 681 – 690.

Leso, T., andPeck, K. L., (1992) Computer Anxiety and Different Types of Computer Courses. *Journal of Educational Computing Research,* 8 (4), 469 - 478.

Levine, T., and Donitsa-Schmidt, S., (1998) Computer Use, Confidence, Attitudes, and Knowledge: A Causual Analysis. *Computers in Human Behavior, 14(1),* 125-146.

Loyd, B.H., and Gressard, C.P. (1984). Reliability and factorial validity of computer attitude scales. *Education and Psychological Measurement, 44,* 501-505.

Loyd, B.H., and Gressard, C.P. (1986). Gender and Amount of Computer Experience of Teachers in Staff Development Programs: The Effects on Computer Attitudes and Perceptions of Usefulness of Computers. *Association of Educational Data Systems Journal, 18(4),* 302 – 311.

Loyd, B.H., and Loyd, D.E. (1985). The Reliability and Validity of Instruments for the Assessment of Computer Attitudes. *Educational and Psychological Measurements, 45,* 903 – 908.

Miller, L. H., and Smith, A. D. (1997) . The Different Kinds of Stress. In *Psychology at Work: Get the Facts.* [18 paragraphs]. American Psychological Association. [On-line], Available: internet: Hostname: helping.apa.org Directory: work/stress4.html

Pope-Davis, D.B., Vispoel, W.P. (1993) How instruction influences attitudes of college men and women towards computers. *Computers in Human Behavior, 9(1),* 83-

93.

Salanova, M., Grau, R. M., Cifre, E. and Llorens, S., (2000) Computer Training, Frequency of Usage and Burnout: The Moderating Role of Computer Self-Efficacy. *Computers in Human Behavior, 16*, 575 – 590.

Salanova, M., and Schaufli, W.B. (2000) Exposure to information technology and its relation to burnout. *Behaviour and Information Technology, 19(5),* 385 – 392.

Shashaani, L., *(1994)* Gender-differences in computer experiences and its influence on computer attitudes. *Journal of Educational Computing Research, 11(4),* 347-367.

Smith, B., Caputi, P., and Rawstorne, P. (2000) Differentiating computer experience and attitudes toward computers: an empirical investigation. *Computers in Human Behavior, 16,* 59-81.

Thompson, R.L., Higgins, C.A., and Howell, J.M. (1991) Personal computing: toward a conceptual model of utilization. *MIS Quarterly, 15(1),* 125 – 143.

Woodrow, E. J. (1991) A comparison of four computer attitude scales. *Journal of Educational Computing Research, 7,* 165-187.

APPENDIX A

INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY
Austin Peay State University

You are being asked to participate in a research study. This form is intended to provide you with information about this study. You may ask the researcher listed below about this study or you may call the Office of Grants and Sponsored Research, Box 4517, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881 with questions about the rights of research participants.

1. **TITLE OF RESEARCH STUDY**. Factors related to how people react to working with computers.

2. **PRINCIPAL INVESTIGATOR.** Jennifer L. Roeske, Graduate Student in Psychology at Austin Peay State University. Dr. David Denton, Faculty Advisor, Department of Psychology, Austin Peay State University

3. ***THE PURPOSE OF THE RESEARCH.*** *To determine whether or not computer utilization* and one's confidence with computers influences one's reactions to them. This study is being conducted to fulfill a master's thesis requirement. Data may be published or presented.

4. **PROCEDURES FOR THIS RESEARCH.** Upon volunteering to participate for this study, you will be given a questionnaire that addresses your reactions and attitudes toward computers as well as a demographic sheet. Your name should not appear anywhere on the questionnaires. The study should take you approximately 5 to 10 minutes to complete. Once you have completed the questionnaires, you will be asked to deposit them into a box, which will be located in the secretary's area. You will then be given proof of participation to present to your professor should he/she wish to award extra credit for your participation; the researcher will not be present during the study. Data will be kept confidential to the extent provided by law.

5. **POTENTIAL RISKS OR BENEFITS TO YOU.** There are no risks associated with this study. You do not have to answer any question you do not wish to. Extra credit may be granted at the discretion of your instructor.

6. **INFORMED CONSENT STATEMENT**: Participation in this study is totally voluntary. You do not have to answer any question you do not wish to answer. You may end your participation at any time, for any reason, without fear of penalty. If you do choose to stop your participation in this study, please indicate your wishes to the secretary so that all data that was collected from you can be destroyed. Extra credit may be granted at the discretion of your instructor.

If I have questions about the study I may call Jennifer L. Roeske (graduate student, Psychology Department) at (931) 221- 7233 or indigoangl@hotmail.com or Dr. David Denton (faculty supervisor, Psychology Department) at 931) 221-6267or dentond@apsu.edu

APPENDIX B

Personal Information Questionnaire

Please check the blank that applies to you. DO NOT put your name anywhere on this form.

1. Age: ❑ 22 or less ❑ 23-25 ❑ 26-30
   ❑ 31-35 ❑ 36-40 ❑ 41-45
   ❑ 46-50 ❑ 51-55 ❑ 55+

2. College level completed: ❑ 1st year ❑ 2nd year ❑ 3rd year ❑ 4th year
   ❑ Bachelors ❑ Masters ❑ Doctorate

3. Major area of study: _____

4. Sex: ❑ Male ❑ Female

5. How many hours a month, total, do you use a computer? _____ hours.

6. Briefly state the type of computer experience: _____

COMPUTER ATTITUDE SCALE

Below are a series of statements. There are no correct answers to these statements. They are designed to permit you to indicate the extent to which you agree or disagree with the ideas expressed. Place a checkmark in the space under the label which is closest to your agreement or disagreement with the statements.

		Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
1.	I'm no good with computers.	❑	❑	❑	❑
2.	Generally, I would feel OK about trying a new problem on the computer.	❑	❑	❑	❑
3.	I don't think I would do advanced computer work.	❑	❑	❑	❑
4.	I am sure I could do work with computers.	❑	❑	❑	❑
5.	I'm not the type to do well with computers.	❑	❑	❑	❑
6.	I am sure I could learn a computer language.	❑	❑	❑	❑
7.	I think using a computer would be very hard for me.	❑	❑	❑	❑
8.	I could get good grades in computer courses.	❑	❑	❑	❑
9.	I do not think I could handle a computer course.	❑	❑	❑	❑
10.	I have a lot of self-confidence when it comes to working with computers.	❑	❑	❑	❑

APPENDIX C

Computer Hassles Scale

Directions: Computer technology hassles are irritants related to experiences with computers and computer technology. These irritants can range from minor annoyances to fairly major problems. They can occur infrequently or fairly often. Listed below are a number of ways in which a person can feel hassled by computers and computer technology. Respond to each hassle by circling a 0, 1, 2, or 3 to indicate how SEVERE the hassle has been for you during the past TWO MONTHS.

Severity:

0 – not at all 1 - somewhat severe 2 - moderately severe 3 - extremely severe

Hassles:				
1. Computer system is down	0	1	2	3
2. Lost in the computer	0	1	2	3
3. Poorly documented software	0	1	2	3
4. Computer hardware failure	0	1	2	3
5. Computer keyboard lockup	0	1	2	3
6. Programming error	0	1	2	3
7. Illegal input message	0	1	2	3
8. Updated software requirements	0	1	2	3
9. Poor user/computer interface	0	1	2	3
10. Slow program speed	0	1	2	3
11. Slow computer speed	0	1	2	3
12. Poorly written computer documentation	0	1	2	3
13. Incompatible software program	0	1	2	3
14. Incomprehensible computer instructions	0	1	2	3
15. Outdated computer skills	0	1	2	3
16. Increased time demands	0	1	2	3
17. Electrical surges - data are lost	0	1	2	3
18. Lost data	0	1	2	3
19. Lost program	0	1	2	3
20. Crashed program	0	1	2	3

0 – not at all 1 - somewhat severe 2 - moderately severe 3 - extremely severe

21. Crashed system/lockup	0	1	2	3
22. Damaged storage media - disks, tapes,etc.	0	1	2	3
23. Need to update skills	0	1	2	3
24. Keyboard typing errors	0	1	2	3
25. Need to learn new software	0	1	2	3
26. Forget to save work	0	1	2	3
27. Keyboard paralysis	0	1	2	3
28. Uninformative computer conversations	0	1	2	3
29. Violent language of computers	0	1	2	3
30. Too much computer information	0	1	2	3
31. Too little computer information	0	1	2	3
32. Software confusion	0	1	2	3
33. Lack of help with computer problems	0	1	2	3
34. Lack of computer expertise	0	1	2	3
35. Increased computer use expectations	0	1	2	3
36. Lack of computer application software	0	1	2	3
37. Obsolete computers	0	1	2	3

VITA

Jennifer Lynn Roeske was born in Rockledge, Florida on September 5, 1976. She attended elementary and junior high schools in the Melbourne Area School District and graduated from Melbourne High School in May, 1995. The following August she entered Brevard County Community College and in May, 1997 received her Associates of Arts degree. The following August she entered the University of Central Florida and in May, 1999 she received the degree of Bachelor of Arts with a major in Psychology. In August, 1999 she entered Austin Peay State University and in May, 2002 she received a Masters of Arts degree in Psychology with a concentration in Industrial/Organizational Psychology.

She is presently seeking employment in the Nashville, Tennessee area.