A COMPARATIVE STUDY OF TEACHER CANDIDATES ATTITUDES TOWARDS COMPUTING AND IT IN NORTH CYPRUS

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ABSTRACT

This study aims to measure the attitudes of the freshman year students at Pre-School Teaching, Primary School, Psychological Consulting and Computing and Computing and Education Technologies Teaching Departments in Near East University, Ataturk Education Faculty towards computers. Usage of computing and IT is an essential factor in human life especially in education and teaching. In addition, it was intended to identify the future teacher candidates' attitudes towards computing while there have been changes in data processing technology and economic reforms together with areas covering social, political and economical changes all around the world. This study also aims to find whether there is a relationship that influences the freshman students' gender, the department they study, family's income, area of settlement and place of birth.

ABSTRACT

 Yakın Doğu Üniversitesi Atatürk Eğitim Fakültesi'ne bağlı Okul Öncesi Öğetmenliği, Sınıf Öğretmenliği, Rehberlik ve Psikolojik Danışmanlık ve Bilgisayar ve Öğretim Teknolojisi Öğretmenliği Bölümlerinde okuyan birinci sınıf öğrencilerinin bilgisayara yönelik tutumlarının çeşitli değişkenlere göre incelenip, ortaya çıkarılması, giderek bilgisayarın insanoğlunun tüm hayatına ve özellikle eğitim öğretim sürecine katkı sağlamsının zorunluluk olarak yaşanmasından, geleceğin öğetmen adaylarının bilgisayara yönelik tutumlarını ortaya çıkararak, bilişim teknolojileri ve ekonomik reformların tüm dünyada sosyal, politik ve ekonomik alanlarada değişikliklere uğraması sürecinde, öğretmen adayları açısından çözümlenmesi ve bilgisayar eğitimi açısından şekillendiryeme yatırım yapmak adına anlam ifade etmektedir.

Keywords: Computer, Attitudes Towards Computer, teacher candidates, teachers'

INTRODUCTION

Rapid developments in technology have allowed the adoption of technology in every aspect of human life. Like all the other disciplines, educationists have tried to find out how technology can be integrated into classroom to benefit the students. Computers are perceived as instructional tools that enhance students' motivation in learning. According to Herman (1994) the use of computers in education is to support rich constructive learning environments. Technology in education concentrates on how students can learn and use technology in the most effective way. Mikropoulos (1994) suggest that computer programs can provide a safe environment for children to experiment and play withy processes and ideas for teachers to realize what students are capable of.

How teachers perceive computer usage in the classroom is an important issue as a positive attitude will lead to a more effective teaching (Tuzcuoğlu). Computer technology can be incorporated into the classrooms in such a way that students are highly benefited. It should be examined how to encourage teachers to use technology to teach. Students should be motivated to learn computers, which require that they have positive attitude towards the computers. The success of using technology depends on comfort level of teachers who are primarily responsible in using technology in classroom. Teachers' attitudes determine the successful infusion of computers in instruction. According to many studies greater experience with computers and related technologies is associated with positive attitudes (Jay & Willis 1992.; Crowell1997.)

Research generally supports that females have less overall experience with computers and are more likely than males to have a negative attitude towards computers. Also women have reported lower levels of experience and more negative attitudes. In his research Raub (1981) found that gender was significantly related to computer anxiety which influences attitudes towards usage of computers. Chen (1986) also found that men held more positive attitudes of interest in and confidence with computers and had lower computer anxiety than women. These gender differences in the field of computer literacy signify present economical and social imbalance.

Many researches have concluded that personal traits and backgrounds such as computer anxiety and confidence level have an influence on teachers' attitudes in using computers in the classroom (Pina & Harris 1993; Hannafin & Freeman (1995).

According to Gugerty, Tredaway and Rubinstein individuals abilities influence their attitudes which in turn have a positive effect on their experiences.

Miura (1987) has also suggested that self-efficacy may be an important factor related to the acquisition of computing skills. Self efficacy is defined as the belief in one's ability to execute successfully a certain course of behaviour. Researches have been suggested that depending on an individuals self efficacy, the person will decide whether to engage in a task (Bandura 1997, 1981) and experience of success in performing a task will increase the self efficacy connected with the task. Therefore if a person has a low anxiety and high confidence and efficacy, than he or she will be more willing to engage in a task and have a positive attitude (Webster & martocchio, 1992; Zhang & Espinoza, 1998). Thus computer self-efficacy is a belief of ones capability to use the computer (Compeau & Higgins 1995) and individuals with a little self efficacy and confidence in their ability to use computers might perform poorly on computer based tasks.

Computer anxiety is also found to be an important factor that influences attitudes of individuals towards computers (Marcolides 1988, Chua,Chen & Wong 1999) and is charactersied as an effective response an emotional fear of potential negative outcomes (Kanfer & Heggestad 1997). A high level of anxiety has been negatively related to learning computer skills (Harrington, McElroy 6 Morrow,1990), resistance to the use of computers (Torkzades & Angula 1992, Weil & Rosen 1995) and poorer task performance (Heinssen et al. 1987).

Levine, Schmidt and Smadar (1997) have also concluded that positive computer attitudes and confidence lead to a commitment to learning to use computers. Studies have found a positive correlation between students computers attitudes and learning to use computers but a negative correlation between students self confidence regarding computers and their willingness to use them.Janice et al. (1997) have found that there is a positive relationship between personality types of individuals and their attitudes toward information technology.

METHOD

The sample for this study was drawn from the freshmen students of Near East University, Faculty of Education. The questionnaires were distributed to the students at the beginning of their class period. The participants were assured that they would remain anonymous. Of the 250 questionnaires distributed, 216 completed questionnaires were returned with a response rate of %86.4.

As the measuring instrument, a Turkish translation made by Berberoglu and Calikoglu (1991) was used. The Cronbach Alpha value instrument was measured as 0.90 as a result of the "computer attitude measurement". The original being in English, Loyd and Fressard (1984) measured the attitudes towards computing as: Fear of Computers (10 matters/statements/paragraphs); Having Trust in Yourself While Using the computer (10matters /statements/ paragraphs); and finally,The Use of Computers which is made of 40matters /statements /paragraphs.

In analyzing data independent t-tests, variance analysis and LSD testing techniques were used. These tests were also used in order to compare gender, department, family income, place of residence, parents' place of birth and students' place of birth, therefore this would show whether there would be any changes of their attitudes towards environmental problems.

FINDINGS AND COMMENTS

There were 213 responding students consisting of 23% male and 77% female. All of the respondents were selected from various departments of Ataturk Education faculty from freshman year students. 28.6% of respondents were from the department of Pre-School education, 21.1% from department of Primary School Teaching, 29.1% from department of Psychological Consulting and computing and 21.1% from department of Computing and Education Technologies.

Table 1: Relationship between positive attitude levels of students' towards computing with influence of gender.

		N	X	t	P
Gender	Male	46	3,84	5,009	0,098
	Female	167	3,35		

*p<0, 05

Independent t-test has been conducted in order to determine positive attitude levels of students towards computing on influence based on their genders. Mean scores of male and female students positive attitudes towards computing were calculated as 3.84 and 3.35 respectively and male students were found to have a slightly higher mean scores than female students albeit this difference was found significant (p= 0.098). This result can be interpreted as female students' being slightly less sensitive to computing than male students'.

Table 2: Relationship between attitude levels of students' towards computing and owning a computer

		N	X	t	P
Computer	owns	158	3,48	0,648	0,040*

Does not own		55	3,41		

Independent t-test has been conducted in order to determine the attitude levels of students' towards computing based on their ownership. Mean scores students who own computers were calculated as 3.48 and students who don't own computers as 3.41 respectively and the students who own computers towards computing have higher mean scores than students who do not own computers albeit this difference was found significant (p=0.040). This result can be interpreted as students who own computers being slightly more sensitive to computers than those who do not.

Table 3: Relationship between positive attitude levels of students' towards computing with influence of their place of birth.

		N	X	t	P
Place of Birth	Cyprus	129	3,49	0,854	0,868
	Turkey	84	3,42		

All students' are those either born in Cyprus or Turkey. Independent t-test has been conducted in order to determine positive attitudes levels of students towards computing on influence based on their place of birth. Means scores of students' positive attitudes towards computing who were born in Turkey were calculated as 3.42 to those born in Cyprus as 3.49 respectively and students' born in Turkey were found to have a lower mean scores than students' born in Cyprus albeit this difference was found significant (p= 0.868). This result can be interpreted as students' born in Cyprus being slightly more sensitive to computers than those who were born in Turkey.

Table 4: Relationship between positive attitude levels of students' towards computing with influence of their mothers place of birth.

		N	X	t	P
Mother's Place of Birth	Kıbrıs	103	3,51	1,149	0,713
	Türkiye	110	3,41		

Independent t-test has been conducted in order to determine positive attitude level of students' towards computing with influence based on their mothers place of birth. Mean scores of students' positive attitudes towards computing whose mothers were born in Turkey were calculated as 3.41 to those born in Cyprus as 3.51 respectively and their mothers who were born in Turkey were found to have a lower mean scores than those who were born in Cyprus albeit this difference was found significant (p= 0.713). This result can be interpreted as students mothers born in Cyprus being slightly more sensitive towards computing than those born in Turkey.

Table 5: Relationship between positive attitude levels of students' towards computing with influence of their fathers place of birth.

		N	X	t	P
Fater's Place of Birth	Cyprus	108	3,48	0,399	0,975
	Turkey	105	3,44		

Independent t-test has been conducted in order to determine positive attitude level of students' towards computing with influence based on their fathers place of birth. Mean scores of students positive attitudes towards computing whose fathers were born in Turkey were calculated as 3.44 to those born in Cyprus as 3.48 respectively and students fathers who were born in Turkey were found to have lower mean scores than students fathers who were born in Cyprus albeit this difference was found significant (p=0.975). This result can be interpreted as students fathers born in Cyprus being slightly more sensitive towards computing than those born in Turkey.

Table 6:Relationship between positive attitude levels of students' towards computing with influence of their department.

Variance	Sum of squares	Sd	Mean of squares	F
Between	14,022	3	4,674	

	Sum of Squares	df	Mean Square	F
Between groups				3,969*
Within groups	242,573	206	1,178	
Total	256,595	209		

*=P<0.05 P=0,014

In order to determine the difference between groups of LSD Post-Hoc test has been conducted. Results of Post-Hoc analysis are shown in the table below.

	Primary school Teaching	Guidance & Psychological	Computing & Education Technologies Teaching
Pre-School Teaching	0,704	-0,704	-0,230
Primary School		-0,473*	0,473*
Guidance & Psychological Consulting			-0,230

The relationship between positive attitude levels of students towards computing with influence of department has shown a difference. In order to determine the difference between groups of LSD Post-Hoc Test has been conducted and the results of Post-Hoc Test Analysis have been shown as above. A meaningful difference was identified when the comparison was made between Pre-School Teaching department and Primary School Teaching department. The results of the Post-Hoc Test analysis indicated that Primary School Teaching Department had the highest scores compared to Guidance & Psychological Consulting and Computing and Education Technologies Teaching therefore being the most sensitive towards computing.

DISCUSSIONS

The results of analysis showed that there was a significant relationship between gender and attitudes towards computers, as female students' being slightly less sensitive to computing than male students'. Although many of the studies suggest that there are no differences in computer skills and in computer attitudes between male and female students (Francis 1993, Young 2001, Lloyd & Gressard (1984b); Koohang (1989)) most of the studies clearly suggest significant difference (Morahan-Martin, Olinsky, Schumaer 1994). In her study, Shashamnai (1993) found many differences among high school students regarding different perceptions towards computers between the sexes. Results indicated that male students were more enthusiastic for becoming familiar with computers while girls tended to have a negative attitude towards computers. Also another study conducted among first year medical students in Denmark by Dorup (2004) indicated that male students had a more positive attitude towards the use of computers in their studies.

Another result reached was the indication that students who own computers are slightly more sensitive to computers and have more positive attitudes to computers than those who do not. Teachers' attitude towards using computers as instructional tools depends on their familiarity with computers. A study conducted by Galowich (1999) found that there were significant differences between teachers who use technology to teach and those who do not, in their technology attitude and usage. Teachers who are familiar with the use of the computer most often have more positive attitudes towards its implementation in the classroom. Okinaka (1992) suggests that teacher attitudes towards computers can be affected favourably if they have an understanding of how computers can be used most effectively. According to Frey (2000) after receiving training on the basic computer skills, attitudes of teachers have been changed. This indicates that teachers' attitudes are influenced by previous experiences and familiarity. Researches have investigated that teachers have both positive and negative attitudes in the use of computers in classroom (McFarlane et.al. 1997). Teachers who do not have the background on current technology are less likely to use the computer (Bennet & Frederick 1997)

The study also measured the relationship between place of birth and attitudes towards computers .The results of the analysis indicated that students' born in Cyprus are slightly more sensitive to computers than those who were born in Turkey and have more positive attitudes towards computers. According to Shashaani (1993), the family is the primary exposure that an individual receives, shaping his beliefs, basic attitudes, sex role identity and self-image. She also suggests that the encouragement of ones parents and the plans of ones peers appear to shape ambitions more directly and with greater impact than any other source. Primarily parents and educators influence student's decisions and attitudes towards computers. No research have been found that supports or disagrees with the suggestion that there will be a meaningful relationship between

parents residence and the children attitudes towards computers although a research conducted by Isman & Dabat (2006) indicated that there was no meaningful difference between attitudes of students and education levels of their parents.

Same results were found when respondents' parents' birth place was analyzed. Students whose mothers were born in Cyprus were found to be slightly more sensitive towards computing than those whose mothers were born in Turkey. Also, students whose fathers were born in Cyprus were again found to be slightly more sensitive towards computing than those whose fathers were born in Turkey.

The results of the Post-Hoc Test analysis indicated that Primary School Teaching Department had the highest scores compared to Guidance & Psychological Consulting and Computing and Education Technologies Teaching therefore being the most sensitive towards computing. A study conducted by Stark,Meier and Rumpel (2006) among business and engineering students in order to measure their attitudes towards laptop computers indicated that there was no important differences in the responses of both major students showing attitudes students towards computers was not dependent on their choice of major. Same result was reported by Hong (1998) indicating there were no significant differences in undergraduates' attitudes towards computers and computer anxiety for male and female undergraduates and their fields of study. On the contrary another study conducted by Sam, Othman and Nordin (2005) indicated that there were differences in undergraduates internet usage levels based on the discipline of study.

CONCLUSION

Computers have become vital instruments for today's education system. Many researches have concluded that usage of computers help education process being more productive and efficient. Therefore it is very important for future teachers to have positive attitudes towards computers as they will be used as teaching instruments. This study aims to understand the attitudes of teacher candidates towards computers, taking into account important demographic and social factors like gender, place of birth, and ownership.

REFERENCES

Bandura, A. (1986) "Social Foundation, of Thought and Action" Erplo Wood Cliffs N3 Practice Hall.

Chau, SL, Chen. D. and Wong. A. FL. (1999) "Computer Anxiety and IB Cumulates: Computers in Human Behavior" 15, 609-623.

Compeau, DR. and Higgins. CA. (1995) "Computer Self Efficiency; Development of a Measure Initial Test" MIS. Quarterly. 189-211.

Dorup, 3. (2004) "Experience and Attitudes Towards Information Technology among First-Year Medical Students in Denmark" JMED Internet Res. 2004; 6(1); e10.

Francis, LJ. (1993) "Computers and Education" Pergamon Press Ltd V20 n3 4/93.

Frederick, B. (1997) "Why Computers are Ineffective Today" Computers as Tutors, US.

Galowich, P. (1999). "Learning Styles, Technology Attitude and Usage: What are the Connections for Teachers and Technology in the classroom?" ERIC Database: 432312.

Gugerty, L. Treadway C. Rubinsten J. "Individual Diffrences in Internet Search Outcomes and Processes" ACM 1-59593-293 Quebec, Canada.

Harrington, KV, Mc. Elnoy. JC. and Morroup. C. (1990) "Computer Anxiety and Computer Based Training: Journal of Educational Computing Research 343-358.

Heinssen, R. K. Glass. CR. and Knight. LA. (1987) "Assessing Computer Anxiety: Development and Validation of Computer Anxiety and Physical Computers in Human Behavior" 3, 49-59.

Herman, J. L. (1994). "Evaluating the Effects of Technology in School Reforms". In Means, B. (Ed.), Technology and Education reform: the Reality behind the promise (pp 133-167), San Francisco: Jossey-Bass.

Isman, A. Dabaj, F. Turkish Online Journal of Distance Education – Oct. 04 ISSN 1302-6488 Vol. 5.4.

Janice, et al. (1997) "Analysis of Personality Types and Attitudes toward Information Technology" Computer Education and Computer Systems (CECS) 5610: Analysis of Educational Technology Research.

Loyd, BH. And Gressard, C. (1984) "Reliability and Pachorial Validity of Computer Attitude Scales" : educational and

Psychological Measurement 501-505.

Martin, Olinsky and Schumacher (1994) "Gender Differences in Computer Experience Skills and Attitudes among Incoming Students` Journal Research of Educational-Computing Research" V11n4,5

Mcfarlane, Terry A.; Hoffman, Eleanor R.; Green, Kathy E. (1997). Teachers Attitudes towards Technology: Psychometric Evaluation of the Technology Attitudes Survey. (ERIC Document Reproduction No. ED411279).

Mikropoulos, TA. (1994) "Computers in Pre-school Education" P339-351 Journal of Computing in Childhood Education.

Miura, I.T. (1987) "The Relationship of Self-Efficiency Expectations to Computer Interest and Course Enrolment in College" Sex Roles 16, 303-311.

Okinaka, Russell (1992). "The Factors That Affect Teacher Attitudes towards Computer" Use. ERIC Database:3460369.

Pina, A.A.; Harris, B.R. (1993). "Increasing Teachers Confidence in Using Computers for Education". Paper presented at the annual conference of the Arizona Educational Research Organization (Tucson, Arizona, November, 1993). ERIC Database: ED365648.

Raub, A. (1981) "Comelates of Computer Anxiety in College Students" Doctorial disseraction Unıv. of Penn. Philedelphia.

Rosen, LD. (1997) "Computer Phohia" Behavior Research Methods. Instruments and Computers 19, 167-179.

Sam, H. Othman A. Nordin, Z. "Computer Self-Efficency, Computer Anxiety and Attitudes toward Internet" Educational Technology and Society 8(4), 205-219.

Shashaani, L. (1993) "Gender Based differences in Attitudes towards Computers" Computer and Education 20, 169-181.

Stark, JL. Mier, RJ. Rumpel, JH. "Student Attitudes toward Laptop Computers" SBA36 (1) 50-57.

Trudi Jones and Valerie A. Clarke, School of Psychology, Deaking University, Geelong. Victoria 3217 Australia, 1994.

Tuzcuoğlu (2000) "teachers Attitudes towards using Computers in Classes" Osmangazi University.