VOCATIONAL COLLEGE STUDENTS' COMPUTER USAGE PROFILES AND ATTITUDES TOWARD COMPUTERS

Tamer KUTLUCA[1], Halim BAŞKAN[2]

ÖZET

The purpose of this study is to determine the status of computer usage and the attitudes toward computers of vocational college students and to investigate of several variables on their attitudes. For this purpose, "Information form about using computer" and "Scale of the attitudes for computers" was applied to 137 vocational college students. This study was conducted with survey methods. The data is analyzed through standard deviation and mean value as well as t-test and one way ANOVA for group comparison, besides to find which group causes the difference in the group comparison, a post hoc Tukey HSD test is employed. At the end of the study it is determined that the vocational college students use of text program, presentation program email, multimedia and spreadsheet program were scored as "medium high and above" level of use. It is also determined that there is a no significant difference according to the variables of taking frequency of using computer, computer ownership and gender of the scores of attitudes toward computers.

Keywords: Computer attitudes, computer usage, teachers

INTRODUCTION

That is a known fact that the progress in computer technologies has greatly affected daily life. Information in our age has undertaken a leading role in the economic development of developed societies. Rapid development of computer technologies has become, as in every field, an indispensable factor in the field of instruction (Tsungjuang, 2009). The use of computers in education is steadily increasing. In this context, it is essential for educational researchers to investigate the extent of computer integration and the factors influencing computer implementation. The actual use of computers in education can be defined and determined in different ways. Specifically, for the appropriate use of computers in vocational education, vocational high school student should be able to select and use developmentally appropriate programs and make use of the computers in promoting the development fields of the vocational high school students. In this way, vocational high school students become an important element in the vocational education in the use of computers. For this reason, the vocational high school in which students s are trained turn out to be important in that students should develop positive attitudes towards computer use and should be able to make the most of computers in education.

Attitude is one of the determining factors in predicting people's behavior. That is to say by understanding an individual's attitude towards something, one can predict with high precision the individual's overall pattern of behavior to the object (Ajzen and Fishbein, 1977: as cited in Yushau, 2006). Attitude has been defined as "a learned predisposition to respond positively or negatively to a specific object, situation, institution, or person" (Aiken, 2000: as cited in Yushau, 2006). Therefore, attitude affects people in everything they do and in fact reflects what they are, and hence a determining factor of people's behavior (Yushau, 2006). Computer attitude has been defined as a person's general evaluation or feeling of favour or antipathy toward computer technologies and specific computer related activities (Smith, Caputi and Rawstorne, 2000). Computer attitude evaluation usually encompasses statements that examine users' interaction with computer hardware, computer software,

[1] Yrd.Doç.Dr. Dicle Üniversitesi, tkutluca@dicle.edu.tr
[2] Doç.Dr. Dicle Üniversitesi, hbaskan@dicle.edu.tr

other persons relating to computers, and activities that involve computer use. Computer-related activities examined are either single instances of behavior (e.g. specific software use) or classes of behavior (e.g. attaining computer related courses) (Smith, Caputi and Rawstorne, 2000). Various computer attitudes scales have been developed (e.g. Smith, Caputi and Rawstorne, 2000) but the Computer Attitudes Scale developed by Loyd and Gressard (1984) is one of the most often applied scales to undergraduate students. Computer attitudes are influenced by different variables. Examples from recent research include knowledge about computers (Ersoy and Karatepe, 2012), gender (Kose, Gencer and Gezer, 2007), computer office program (Korucu and Gunduz, 2011) and computer liking (Deniz, 2007). In most cases, many of these factors interact with one another to impact on attitude towards computers. Several studies reveal that one of the significant problems about the use of computers in educational settings is the teachers' ineptness at computer use (Sadık, 2006). Therefore it is essential to make the users aware of their attitudes toward computer for successful education and teaching. So as to obtain effective results from the computer education that is or will be implemented in educational institutes, the computer attitudes of teachers and pre-service teachers assume great importance.

Kose, Gencer and Gezer (2007) examined vocational high school entrance students' attitudes toward computer and internet and compared whether there is difference in terms of independent variables of program, gender, having computer and having internet connection. Students' attitudes toward computer and internet were determined using "Attitude Scale toward Computer and Internet Using". Results indicated that vocational high school students were found that they had positive attitudes toward computer and internet using. Male students had more positive attitudes toward computer and internet using. Students who had computer and internet connection displayed more positive attitudes toward computer and internet using.

Keskin and Ertuğrul (2010) determined the attitudes towards computers of vocational school students and to identified computer use, Internet use, use of technology in courses and determine their level of knowledge for the use of the key board is working. The sample of the study includes a total of 96 vocational school students. The data of the study were collected using two tools: general information form and scale of the computer attitudes. Results indicated that vocational school students had positive attitude toward computers.

Ersoy and Karatepe (2012) examined electronic computer department in technical high school technical students' usage level of educational technologies. The research has been applied as choosing with the simple random sampling method in Istanbul. Total of 242 students were asked about the use of educational technologies, use of information technologies, using the skills of the internee and requirements, difficulties on educational technology. It has been seen that students use educational technologies and informational technologies at basic level and not enough using the skills of the internet of students.

In the past 10 years, attitudes toward computers have been studied with different samples and instruments. A number of studies has been performed which have aimed at specifying of attitudes both primary students (Şerefhanoğlu, Nakiboğlu and Gür, 2008) and university students (Deniz and Kose, 2003). Some studies have shown that the use of computer in education has the potential of changing students' attitudes positively towards computers. However, there have not attained enough studies determining and comparing how vocational high school students' attitudes towards computer are limited (Kose, Gencer and Gezer, 2007; Keskin and Ertuğrul, 2010). The most valuable resource of a society that enables it to survive is human power. The education and employment of this resource not only shows the difference of a society from the others, but renders a healthy interaction within the society. This difference is only possible with education. There is yet no consensus about the concept of education. When we look at education within this framework, the factor which will provide the biggest

contribution to the development of the country is the vocational education. For this reason, it is important identifying the factors that effect of vocational college students towards computer as a means for effective development of vocational college curriculum that will prepare students to face the challenges in the information age.

THE PURPOSE OF THE STUDY

The purpose of this study is to determine the profile of computer usage of vocational college students and the attitudes toward computers of vocational college students and to investigate of several variables on their attitudes.

METHOD

Research Design

The research is a study of survey model. This study is concerned with the determination of attitudes and demographics. One of the main reasons employing survey methodology was that it could enable the researcher to go to the field and to collect data on the question topic from a small sample of the population in a short period as Robson (1997) stated surveys are often cross-sectional studies. That is, the focus is on the make-up of the sample and the state of affairs in the population at just one point in time. Researchers suggest that it is convenient to carry out a survey study when the researcher has time and resource problems (Cohen, Manion and Morrison, 2000). The survey included a section assessing the independent variables; gender, computer experience, computer ownership and dependent variables attitudes toward computer.

Sample

The sample consisted of total 137 students selected in Diyarbakır during 2012-2013 fall semesters. A total of 137 vocational college students' volunteered to participate in the study.

Data Collection

"Computer Usage Information Form" and "Computer Attitude Scale" developed by Berberoğlu and Çalıkoğlu (1992) were used as data collection instruments. In order to collect data about demographic variables of the participants and status of computer usage, it was used a computer usage information form. This form consisted of nine items. In these items teachers were asked to indicate their gender, area, age, computer usage, computer experience, frequency of computer usage, place of computer usage, computer ownership, level of using computer program.

Computer Attitudes Scale, developed by Loyd and Gressard (1984) and translated and validated by Berberoğlu and Çalıkoğlu (1992), was employed to determine their attitudes toward computers. The Computer Attitudes Scale consists of 40-items divided into four-10 item subscales: computer anxiety, computer confidence, computer liking, and computer usefulness. The items presented are positively and negatively worded statements such as "computers do not scare me at all" and "working on a computer would make me nervous". The coefficient alpha reliability for the computer anxiety, computer confidence, computer liking, computer usefulness, and total scores were .90, .89, .89, .82, and .95 respectively. Cronbach alpha coefficient for computer attitudes scale was calculated as .93.

Data Analysis

The data from the respondents were analyzed using SPSS (Statistical Packages for Social Sciences) version 15.0. Positive items in the computer attitudes scale survey were assigned with numerical values ranging from 1 = "Strongly disagree", to 5 = "Strongly agree". For negative statements the scoring was reversed. As appropriate for 5 point likert scale at data collection instruments, while

scoring and interpreting the findings, the score intervals are respectively 40-71.9 for "very low", 72-103.9 for "low", 104-135.9 for "mid-level", 136-167.9 for "high" and 168-200 for "very high".

While analyzing data, descriptive statistics such as frequency, mean and percentage, were obtained and then t-test and variance analysis were employed as statistical procedures. For paired group comparisons, independent t-test was conducted. On the other hand, for comparisons of groups for more than two, one-way ANOVA was carried out. In order to investigate which group caused the difference in the group comparison, a post hoc Tukey HSD test was employed. Computer attitudes are significant at the significant level .05 and 0.01.

RESULTS

The profiles of the participants in this study are illustrated in Table 1.

Table 1: The Profiles of the Participants

Computer Ownership	f	%
Yes	63	46.3
No	73	53.7
Computer Usage	f	%
Yes	121	89
No	15	11
Computer Experience	f	%
2 years and less	46	33.8
3-5 years	30	22.1
6 years and above	60	44.1
Frequency of computer usage	f	%
3 hours and less	42	31.4
3-6 hours	51	37.2
7 hours and above	43	32.2

As seen in Table 1, 46.3 % of the participants have a computer while the rest, 53.7 % have not a computer. All of the most them (89%) are using computer and 33.8 % were cognizant of computers for two years, 22.1 % used computers for 3–5 years and 44.1 % for more than six years. When the weekly hours of computer usage were examined, it was found that across the vocational high school students, 32.2 % were using computers for over seven hours a week, 37.2 % for 3–6 hours a week and 31.4 % for less than three hours a week.

Table 2: Using Computer Programs Concerning the Percentage Level Values

Using Computer Programs	Using Level (%)							
	Low		Middle		Good		Very good	
	f	%	f	%	f	%	f	%
Word processing	19	13.9	24	17,5	73	53.3	9	6.6
Spreadsheet	27	19.7	31	22.6	58	42.3	6	4.4
Media Player	26	19	19	13.9	53	38.7	22	16.1
Presentation	38	27.7	32	23.4	42	30.7	8	5.8
Communication	16	11.7	24	17.5	64	46.7	20	14.6
Database	93	67.9	20	14.6	7	5.1	2	1.5
Create web page	90	65.7	21	15.3	11	8	2	1.5

As seen in Table 2 , 77.4% of students a text program, 59.9% a presentation program, 78.8% sending and receiving electronic mail program, 68.7% media player and 69.3% use the spreadsheet program to intermediate levels and is observed above. Besides, 65.7% of the students web design program, and 67.9% a database program did not know if it is understood.

Table 3: Distribution of Students' Attitudes towards Computer?

	n	Minimum	Maximum	Mean	Std. Deviation
Attitudes Toward Computer Score	37	81	152	118.45	11.63

The mean value score for students' views about computer attitudes was found as 118.45, standard deviation as 11.63, the maximum score as 152 and the minimum score as 81. The lowest and highest attained score were 81 and 152, respectively. Based on these findings, it could be claimed that the students who participate in this study have "middle level" attitudes toward computer and views about computer attitudes were regarded as positive.

Table 4: Independent *t*-test Analysis for Computer Attitudes by Gender

Gender	n	Mean	SD	df	t	p
Female	65	117.09	10.50	135	-1.297	.197
Male	72	119.67	12.51			

As it is seen in Table 4, the average attitudes toward computer scores of male and female students were 117.09 and 119.67 respectively. This means that there is no significant difference between attitude toward computer scores of male students and female ones [t(135)= -1.297, p>.05]. A one-way ANOVA was performed for the perception scores of teachers' computer attitudes for the frequency of computer experience variable. Post hoc analyses were conducted by Tukey's HSD test. Results of ANOVA are presented in Table 5.

Table 5: ANOVA Results According to the Computer Experience

Computer Experience	n	Mean	SD	df	F	p
2 years and less	46	117.15	10.82	(2-133)	.875	.419
3-5 years	30	117.37	14.07			
6 years and above	60	119.90	10.98			

As shown in Table 5, no significant difference was found in terms of computer experience [F(2-133) = 1.351, p>.05].

Table 6: Independent *t*-test Analysis for Computer Attitudes by Computer Ownership Course

Computer Ownership	n	Mean	SD	f	t	p
Yes	63	118.40	12.31	134	-.207	.836
No	73	118.81	10.82			

As it is seen in Table 6, the average attitudes toward computer scores of the ones who own computers and the ones with no computers were 118.40 and 118.81 respectively. This means that there

is no significant difference between attitude toward computer scores of male students and female ones [t(134) = -0.207, p>.05].

DISCUSSION AND CONCLUSION

It was found in the study that 46.3 % of vocational college students owned a computer and 89% were regular computer users. In addition to they are using computer and 33.8 % were cognizant of computers for two years, 22.1 % used computers for 3–5 years and 44.1 % for more than six years. This finding can be interpreted that computer ownership is not very effective on the computer use of vocational college students. Similarly Işman and Çelikli (2009) results showed that 64.3% of the participants have their own computer at home and Deniz (2007) reported that 8.7% of their use computer at school.

In this study found the level of vocational college students' use of text program, presentation program email, multimedia and spreadsheet program were scored as "medium high and above" level of use. However vocational college students' create web design and database programs were indicated as never been used. On the other hand Kose, Gencer and Gezer, 2007; Ocak and Akdemir (2008) found regarding the frequency of using computer applications, the Internet (34.7%) and emails (%19.9), were indicated as applications used most frequently by the students. Other software programs like word processing (34.7%), spread sheets (36.5%), desktop publishing (36.5%), and presentation (30.2%) were scored as medium level of use. Similar results were obtained in other studies (Kose, Gencer and Gezer, 2007; Kutluca, 2011) as well. It would be facilitating to see how using the computer enables vocational college students to use the computer programs in advanced level computer and computer assisted instruction lessons except "Basic Computer Science" course.

It is seen that attitude scores about computer show a no meaningful difference in the direction of female vocational college students (Kutluca, 2011; Oosterwegel, Littleton and Light, 2004; Tılfarlıoğlu and Ünaldı, 2006; Yuen and Ma, 2002). It is expressed that a meaningful difference is seen in some studies by sexes when the literature is studied (Kose, Gencer and Gezer, 2007; Ocak, 2005; Sadık, 2006). As a result of these studies attitudes toward the computer scores differed significantly according to gender was not understood.

It is also determined that attitudes toward computer depend on the frequency of computer usage. It is seen that there is a meaningful difference between teacher candidates who receive computer courses and teacher candidates who don't receive (Dupagne and Krendl, 1992) however it is seen that it doesn't make a difference by the situation of owning a computer and computer usage age (Kose, Gencer and Gezer, 2007). On the other hand, it is seen that attitudes of students toward computer don't depend on the situation of owning a computer and computer usage age. Kose, Gencer and Gezer (2007) tell that vocational students who have computers have more positive attitudes toward computer than teachers' candidates who don't have computers.

However, the positive attitude that this study will increase with experience, the results can be regarded as an acceptable result. On the other hand from research about the computers built abroad by teachers teaching classes with the teacher's most important determinants of integrating computer technology is understood to be related to their education (Dupagne and Krendl, 1992).

This study of vocational students enrolled in the program according to their attitudes about computer-aided education vary not been identified. Physics, chemistry, biology and math program for students enrolled in computer courses they considered to be close to one another if differences can not quit as a result is acceptable. One of the other results were found for computer-assisted education vocational students to have their computer attitudes and computer use to the state was determined to vary by year. Positive attitudes expedite learning, student achievement and teacher raises and increased the effectiveness of the program; negative attitudes that prevent the learning, therefore, reduce the

success of students and teachers and that it reduces the effectiveness of the program can be said (Selvi, 1996). Successfully conduct computer-assisted training activities, will take on this role of the computer-assisted education vocational students to have more positive attitudes and perceptions of self-efficacy is possible.

REFERENCES

Berberoğlu, G. and Çalıkoğlu, G. (1992). The construction of a Turkish computer attitude scale. Studies in Educational Evaluation, 24 (2), 841-845.

Cohen, L., Manion, L. and Morrison, K. (2000). Research method in education (Fifth Edition). New York: Routledge.

Deniz, L. (2007). Prospective class teachers' computer experiences and computer attitudes. International Journal of Social Sciences, 2 (2), 116-122.

Deniz, L. and Kose, H. (2003). Öğretmen adaylarının bilgisayar yaşantıları ve bilgisayar tutumları arasındaki ilişkiler. M. Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi, 18, 39-64.

Dupagne, M. and Krendi, K.A. (1992). Teachers' attitudes toward computers: a review of the literature. Journal of Research on Computing in Education, 24 (3), 420-429.

Ersoy, S and Karatepe, Y. (2012) Usage level of educational technologies of students at electronic computer department in technical high school. Energy Education Science and Technology Part A-Energy Science and Research. 30 (1), 137-142.

Işman, A. and Çelikli, G. E. (2009). How does student ability and self-efficacy affect the usage of computer technology?. The Turkish Online Journal of Educational Technology, 8 (1), 33-38.

Keskin, N. Ertuğrul, İ. (2010). Buldan MYO büro yönetimi öğrencilerinin, bilgisayar kullanımına yönelik tutumlarının belirlenmesine ilişkin alan çalışması. Uluslararası İktisadi ve İdari İncelemeler Dergisi, 3 (5), 1-20.

Korucu, A.T. and Gündüz, S. (2011). The effects of computer assisted instruction practices in computer office program course on academic achievements and attitudes toward computer, Procedia Social and Behavioral Sciences 15 (2011), 1931–1935.

Kose, S., Gencer, A.S., and Gezer, K. (2007). Meslek yüksekokulu öğrencilerinin bilgisayar ve internet kullanımına yönelik tutumları. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi 21 (1), 44-54.

Kutluca, T. (2011). A study on computer usage and attitudes toward computers of prospective preschool teacher. International Journal on New Trends in Education and Their Implications, 2 (1), 1-17.

Loyd, B. H. and Gressard, C. (1984). Reliability and factorial validity of computer attitude scales. Educational and Psychological Measurement, 44 (2), 501-505.

Ocak, M. A. and Akdemir, O. (2008). An investigation of primary school science teachers' use of computer applications. The Turkish Online Journal of Educational Technology, 7 (4), 54-60.

Oosterwegel, A., Littleton, K. and Light, P. (2004). Understanding computer-related attitudes through an idiographic analysis of gender and self-representations. Learning and Instruction, 14 (2), 215-233.

Robson, C. (1997). Real world research: a resource for social scientists and practitioner-researchers. Oxford: Blackwell.

Sadık, A. (2006). Factors influencing teachers' attitudes toward personal use and school use of computers: New evidence from a developing nation. Evaluation Review, 30 (1), 86-113.

Selvi, K. (1996). Tutumların ölçülmesi ve program değerlendirme. Anadolu Üniversitesi Eğitim Fakültesi Dergisi, 6(2), 39-53.

Smith, S. D. (1986). Relationships of computer attitudes to sex, grade-level and teacher influence. Education, 106 (3), 338-344.

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.

Şerefhanoğlu, H., Nakiboğlu, C. and Gür, H. (2008). İlköğretim ikinci kademe öğrencilerinin bilgisayara yönelik tutumlarının çeşitli değişkenler açısından incelenmesi: Balıkesir örneği. İlköğretim Online Dergisi, 7 (3), 785-799.

Tılfarlıoğlu, F. Y. and Ünaldı, İ. (2006). Faculty attitudes towards computer assisted instruction at the university of Gaziantep. Journal of Language and Linguistic Studies, 2 (1), 43-55.

Tsungjuang, W. (2009). Rethinking teaching with information and communication technologies (ICTs) in architectural education. Teaching and Teacher Education. 25 (8), 1132-1140.

Yuen, A. K. and Ma, W. K. (2002). Gender differences in teacher computer acceptance. Journal of Technology and Teacher Education, 10 (3), 365-382.

Yushau, B. (2006). The effects of blended e-learning on mathematics and computer attitudes in pre-calculus algebra. The Montana Mathematics Enthusiast, 3 (2), 176- 183.

Wozney, L., Venkatesh, V. and Abrami, P. C. (2006). Implementing computer technologies: teachers' perceptions and practices. Journal of Technology and Teacher Education, 14, 120-173.