



Gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers in Jordan

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ABSTRACT

The purpose of this study was to examine gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers. Four hundred and sixty five teachers (223 females and 242 males aged 20 to 50 years) from twenty rural schools in south Jordan participated in the study. The data for the study were collected through the use of quantitative method. The results illustrated some gender and age differences in computer use, competence, attitudes, self-efficacy, and anxiety. However, the differences in computer use between male and female teachers are not similar. Males' teachers typically had higher scores than females' teachers in the use of computer for educational purposes. In addition, males' teachers tend to have higher levels of computer self-efficacy and computer competence than females' teachers. Likewise, both genders exhibited the same levels of attitudes towards computer use. Females' teachers seem to have higher levels of computer anxiety than males' teachers do. Finally, general age differences in computer use, competence, attitudes, self-efficacy, and anxiety among teachers were also found. The outcomes confirm the findings of other studies conducted in different educational settings regarding teachers' gender and age differences in computer use, competence, attitudes, self-efficacy, and anxiety. Consequently, implications of the study give valuable insight to the future use of computers in schools. Recommendations were made based on findings.

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Introduction

Jordan considers education as the key to development, success and progress. Over the past decades, integrating technologies into education has become an important issue in Jordan's educational system. The philosophy of the modern Jordan's educational system is that, the use of technology in education opens a new area of knowledge and offers tools that have the potential to change some of the existing educational methods. Therefore, the emphasis on technology integration has accelerated in Jordan's schools in recent years. In Jordan, achieving a meaningful use of computer in schools can be influenced by many factors related to teachers (Al-zaidiyeen, Mei & Fook, 2010). Among these factors teachers' gender and age are considered very important factors that influence the integration of technology within the field of education. The fact is teachers are an essential part of the successful integration of computers in classrooms. In the urban schools, teachers' gender and ages differences regarding the use of computers for educational purposes have been well documented (Abu-Samak, 2006; Albirini, 2004). In this article, the aim is to investigate the gender and age differences among teachers in computer use, competence, attitudes, self-efficacy, and anxiety. Studying gender and age differences in computer integration is needed to enhance the incorporation of computer for educational purposes.

Related Literature Review

Recently, computers and other technologies have been used as teaching and learning tools in all levels of education to improve performances (Neo & Kian, 2003). Ultimately, greater

demands are placed on teachers to use technologies in various instructional settings. The integration of computer in the classroom is thought by many researchers to increase student and teacher productivity, enhanced integration of curriculum (Whitehead, Jensen, & Boschee, 2003), open the classroom to the outside world (Venezky, 2004), make instructional materials accessible from anytime and anywhere (Gülbahar, 2007), prepare students for the information age (Albirini, 2006), and support traditional classroom settings (Rosenfeld & Martinez-Pons, 2005). Moreover, the effective use of technology can be an important facilitator for teachers to become increasingly more effective in many ways such as preparing, presenting, describing and transferring knowledge, inspiring, advancing students' developments (Hu et al., 2003), and enhancing problem solving skills (Murphy, 1995).

Furthermore, Kinzie, Delcourt and Powers (1994) found that teachers who use computer often are more likely to be a model for the students, and can help students to produce positive attitudes toward computers use. In other words, it has become one of the most powerful means of education development. Most importantly, computer technology can help educators design and adjust curriculum and lessons to fit the specific needs of a class in real time, also can provide teachers with immediate feedback about student comprehension of the lessons they are teaching (Willis, 2006). Thus, the introduction of technology resources into teaching and learning process promises to create opportunities for enhancing students' learning and teachers' teaching.

Gender and Age Differences in Computer Use

Gender and age differences in computer use have been well studied in many countries. The substantial growth and steady increase of computer technology implementation in schools stimulate great interest in understanding what impacts teacher's intentions and decisions to use computer for educational purposes. Many studies show that successful use of technologies in education depends largely on teachers, who eventually determine how they are used in the classroom (Albirini, 2006; Eliane & Ludo, 2002). There has been increasing interest in studying teachers' gender differences in computer implementation in schools. A number of researchers have found that male and female teachers' use computer differently. For example, Gordon (1993) found no significant difference in computer use by males and females. For instance, Van Braak, Tondeur and Valcke (2004) conducted a study with 468 primary school teachers in order to identify the use of computers in classrooms. They found that, male teachers, as opposed to their female colleagues, report to use computers more often. Similarly, these result is supported by Ocak and Akdemir (2008) who found large differences favoring males group in the integration of computer applications as an instructional tool among primary school science teachers' in Turkey. These results contrasted with the findings of Blankenship (1998) who found that female teachers are more likely to utilize computers in classroom instruction than males. In reviewing the research related to age differences in computer use a conflicting results were found (Comber et al., 1997). Blankenship (1998) found that age plays a role in the successful use of technology in the classroom by teachers. In contrast, Isleem (2003) found that age does not have a statistically significant effect on teachers' level of computer use in classroom.

Gender and Age Differences in Computer Competence

A number of studies showed that teachers' computer competence is a significant predictor of the successful use of technology in schools. Computer competence refers to an appropriate knowledge and skills in the use of computer. Albirini (2004) defined computer competence as "teachers' beliefs about their level of computer knowledge and skills". With the increasing popularity of technologies in every aspects of our life, people must master the necessary skills and knowledge related to the use of technology (Martin, 2003). Literature reviewed further reveal that the mastery of computer knowledge and skills is an indicator for the successful use of computer by both teachers and students (Yücel, Acun, Tarman & Mete, 2010). Van-Braak (2004) describes teachers' computer competence as a major condition for instructional computer use" (p. 300). Pelgrum (2001) found that teachers' lack of knowledge and skills are considered as one of the main barriers preventing the use of computers in schools.

This makes it necessary for teachers to acquire computer skills and knowledge in order to integrate the computer in their classroom practices. In the educational literature review, there are a number of studies investigated the influence of gender in computer competence among teachers. A number of researchers (e.g., Idowu, et al., 2004; Russell & Bradley, 1997) found that male teachers have greater computers competence than did females. In terms of age differences in technology knowledge and skills, Appiarius et al. (2010) found that age was a statistically significant factor in technology knowledge and skills where older teachers are less knowledgeable compare with their younger colleagues.

Gender and Age Differences in Computer Attitudes

Many researchers have pointed out the importance of developing positive attitudes towards the use of computer among teachers. Bullock (2004) found that the successful implementation of technologies depends largely on teachers' attitudes. Teachers' attitudes toward the use of computer are associated with their level of computer use and willingness to use computer in classrooms (Gos, 1996). Teachers' with negative attitudes towards computer restrain successful implementation of computer for educational purposes. Research findings are inconsistent with regard to gender differences in computer attitudes. For example, Teo (2008) found no difference in attitude toward computers between male and female. For instance, other studies clearly suggest significant differences in the attitudes towards computer between male and female teachers. Males have been found to have more positive attitude towards computers than females (Francis, 1994; Shashaani, 1997). Several studies have examined the effect of teachers' age on their attitudes towards computer. Varner (2003) found that older teachers had less positive attitudes towards computers their younger colleagues.

Gender and Age Differences in Computer Self-efficacy

Some demographic characteristics such as gender and age are found to be associated computer self-efficacy. Previous researchers have defined computer self-efficacy in many different ways. For example, Compeau and Higgins (1995b) defined computer self-efficacy "a judgment of one's capability to use a computer". According to Murphy, Coover and Owen (1989) computer self-efficacy is an individual's perception of his or her own capabilities regarding specific computer-related knowledge and skills. In other words, it refers to an individual's confidence in using computer technology. Marakas, Yi, and Johnson (1998) found that computer self-efficacy be very helpful on increasing teachers' motivations to use computers. The literature indicates that teachers gender have strong impact on computer self-efficacy. According to Busch (1995), "Gender differences with regard to perceived self-efficacy expectations and attitudes towards computers represents an important issue in the area of computer education" (p. 311). In addition, Butler (2000) reports that males have a higher degree of computer confidence than do females. He concluded that the lower computer confidence among females may prevent female teachers from using computers. Several studies have examined the relationship between computer self-efficacy and computer use. A research done by Russell and Bradley (1997) to determine the nature and extent of Cyberphobia among 350 primary and secondary school teachers in Queensland, Australia depicted that males reported more confidence in using computer than did females.

Gender and Age Differences in Computer Anxiety

Computer anxiety is one of the main barriers preventing teachers from using computer effectively during teaching practices (Alzaidiyeen, 2010). Bradley and Russell (1997) define computer anxiety as "cyberphobia" which refers to a fear of technology/computers. However, computer anxiety consistently has been associated with lower level of computer use usage. A high level of computer anxiety has been negatively related to resistance to the use of computers (Rosen & Weil, 1995). Chua, Chen, and Won (1999) review in some detail the relevant research related to technology anxiety and they summarized the nature of computer anxiety as following: (1) Computer anxiety is a fear for computers when using the computer, or when

considering the possibility of computer use, (2) Computer anxiety is a kind of 'state anxiety' which can be changed, (3) Computer anxiety is measurable in multiple dimensions, and (4) Computer anxiety causes computer use avoidance. Various researchers have investigated the differences in computer anxiety among teachers based on their gender. Kotrlík and Smith (1989) studied computer anxiety among a group of teachers and found that female teachers had significantly higher anxiety levels than male teachers. Furthermore, Ursavaş and Karal (2009) observed gender differences in computer anxiety among pre-service teachers. They found that female pre-service teachers have higher computer anxiety than male did. Several studies have also examined age differences in computer anxiety and found no significant correlation between age and levels of anxiety in a study of school administrators and teachers (Honeyman & White, 1987).

Study Purpose and Questions

The study examined gender differences in computer use, competence, attitudes, self-efficacy, and anxiety among teachers in rural schools. A number of studies investigated the factors affecting computer use among teachers in schools. The bulk of the research on teachers' gender differences in computer use has focused on urban school populations. Yet, the studies on teachers' gender differences in computer use, competence, attitudes, self-efficacy, and anxiety in rural school settings are limited. The research concentrated on answering the following questions:

1. Are there any significant differences in computer usage, competence, attitudes, self-efficacy, and anxiety between male and female teachers?
2. Are there any significant differences in computer usage, competence, attitudes, self-efficacy, and anxiety based on teachers' ages?

Method

In this study the data is presented to examine gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers in Jordan. This study was carried out by using survey method. The random sampling was used in this study because it is "the best single way to obtain a representative sample" as suggested by Gay and Airasian (2000).

Participants

The sample of the study was composed of 465 in-service teachers. The questionnaire was administered in schools. The descriptions of participants are depicted in Table 1.

A total of 800 survey questionnaires were distributed, and 465 (242 male and 223 female) valid data samples were gathered. The age distribution showed highest percentage for the group of 30-39 (35%).

Data Collection Instruments

A pool of statements from Computer Use Scale developed by Isleem (2003), Computer Competence Scale developed by Albirini (2004), Teacher Attitudes towards Computer Scale developed by Albirini (2006), Computer Self-Efficacy Scale developed by Murphy, Coover, and Owen (1988), Computer Anxiety Scale developed by Kotrlík and Redmann (2006) were utilized for analysis in this study. Except demographic ones, the questionnaire was consisted of 65 items divided into 5 subsections using 5-point Likert scale. All items were ranged from 1 to 5, where 5 stood for "strongly agree", 4 stood for "agree", stood 3 for "neutral", 2 stood for "disagree", and 1 stood for "strongly disagree". The first section in the

questionnaire contained information about teachers' demographic characteristics such as gender and age. The second section in the questionnaire asks respondents about their level of computer use. The third section contains items related to respondents' computer competence. The fourth section contains items to measure respondents' attitudes towards the use of computer. The fifth section gathers data on respondents' computer self-efficacy. Finally, the last section in the questionnaire asks respondents about their computer anxiety.

Data Analysis

A number of statistical analyses were used in this study included frequency, percentage, mean, standard deviation, T-test, One-Way ANOVA and correlation.

Findings and Discussions

This section presents the results concerning the instrument validity and reliability. Also, this section discusses each of research questions.

Validity and Reliability of Scales

The face validity and content validity of the questionnaire were assessed individually by four experts in the field of educational technology. Also, pilot study was performed in order to detect the internal consistency and reliability of utilized questionnaire. Cronbach's reliability analysis was performed to test internal consistency of the variables.

Table 2, displays the number of items, Cronbach Alpha reliabilities, Means and Standard Deviations value of all the research variables. The Cronbach alpha values were (0.90 for the Computer Use), (0.96 for the Computer Competence), (0.85 for the Teacher Attitudes towards Computer), (0.90 for the Computer Self-Efficacy), and (.95 for the computer anxiety). The results of the Cronbach Alpha for the scale reliabilities were extraordinarily high and indicated that the items for each scale were internally consistent and reliable.

Results Concerning the First Question

The first research question in this study is "Are there any significant differences in computer usage, competence, attitudes, self-efficacy, and anxiety between male and female teachers?"

T-test analysis was performed to investigate the differences between respondents' gender in their computer use, competence, attitudes, self-efficacy, as well as anxiety. The results from the Levene's Test for homogeneity of variance across the males and females groups for each variable indicated that homogeneity of variance was met for all the five variables. As $p > 0.05$ for all variables, the Levene's Test shows that the research groups were homogenous as shown in Table 3.

As shown in Table 3, for the level of computer usage, the males group reported a Mean ($M=33.91$) with Standard Deviation ($SD=6.91$) while females group reported a Mean ($M=30.42$) with Standard Deviation ($SD=5.11$). A T-test between the Means gave ($t(1, 463) = -3.518, p=0.000$ at $p < 0.05$). The results indicated that there was statistically significant difference in the level of computer usage Means among the gender groups favoring males. In other words, males use computers more than females. For the competence, the males group reported a Mean ($M=27.19$) with Standard Deviation ($SD=8.26$), while females group reported a Mean $M=25.87$ with Standard Deviation of ($SD=7.55$). A T-test between the Means gave ($t(1,463) = -2.355, p= 0.019$ at $p < 0.05$). The findings revealed that there was statistically significant difference in the level of computer competence Means among the gender groups favoring males. In other words, males had a higher level of computer competence more than females do. For the respondents' attitudes towards

computers, the males group reported a Mean ($M=38.22$) with Standard Deviation ($SD=9.77$), while females group reported a Mean $M=37.50$ with Standard Deviation of ($SD=9.39$). A T-test between the Means gave ($t(1,463) = -1.016, p=0.088$ at $p > 0.05$). The findings revealed that there was no statistically significant difference in the attitudes Means among the gender groups. In other words, males and females exhibited same levels of attitudes towards computers usage.

For the self efficacy, the males group reported a Mean ($M=34.74$) with Standard Deviation ($SD=8.19$), while females group reported a Mean $M=32.52$ with Standard Deviation of ($SD=7.14$). A T-test between the Means gave ($t(1,463) = -1.732, p=0.042$ at $p < 0.05$). The findings showed that there was statistically significant difference in the level of self efficacy Means among the gender groups favoring males. In other words, males have higher levels of self efficacy than females. For the anxiety, the males group reported a Mean ($M=34.05$) with Standard Deviation ($SD=7.37$), while females group reported a Mean $M=36.82$ with Standard Deviation of ($SD=8.83$). A T-test between the Means gave ($t(1,463) = -1.683, p=0.037$ at $p < 0.05$). The findings showed that there was statistically significant difference in the level of anxiety Means among the gender groups favoring females. In other words, females were more anxious than males while using computers.

Results Related To Research Question Two

Are there any significant differences in computer usage, competence, attitudes, self-efficacy, and anxiety based on teachers' ages?

The results from the Levene's Test for homogeneity of variance of comparing the dependent variables across the five groups for each variable indicated that homogeneity of variance was met for all the five dependent variables. As $p > 0.05$ for all variables, the results show that the groups were homogenous as shown in Table 4.

For the computer usage, the group of 20-29 years old reported a mean ($M=33.12$) with standard deviation ($SD=6.12$) while the group of 30-39 years old reported a mean ($M=31.52$) with standard deviation ($SD=5.83$), the group of 40-49 years old reported a mean ($M=31.24$) with standard deviation ($SD=6.52$), and the group of over 50 years old reported a mean ($M=30.26$) with standard deviation ($SD=6.14$). An ANOVA test between the means gave $F(3,461) = 3.372$ at $p=0.018$. As $p < 0.05$, the results indicated that there were statistical significant differences in the computer usage mean groups. Further, Tukey's tests HSD for the multiple comparisons indicated that the differences in the means favouring the group of 20-29 years old. The findings showed that the respondents of young age were significantly more using computers than the other groups.

For the competence, the group of 20-29 years old reported a mean ($M=28.43$) with standard deviation ($SD=7.08$) while the group of 30-39 years old reported a mean ($M=25.54$) with standard deviation ($SD=7.61$), the group of 40-49 years old reported a mean ($M=26.40$) with standard deviation ($SD=8.07$), and the group of over 50 years old reported a mean ($M=24.74$) with standard deviation ($SD=6.97$). An ANOVA test between the means gave $F(3,461) = 0.426$ at $p=0.037$. As $p < 0.05$, the results indicated that there were statistical significant differences in the competence mean groups.

Further, Tukey's tests HSD for the multiple comparisons indicated that the differences in the means favouring the group of 20-29 years old as shown in Table 5. The findings showed

that the respondents of young age have significantly higher levels of computer competence than the other age groups.

For the attitudes, the group of 20-29 years old reported a mean ($M=45.59$) with standard deviation ($SD=6.81$) while the group of 30-39 years old reported a mean ($M=42.61$) with standard deviation ($SD=9.30$), the group of 40-49 years old reported a mean ($M=43.36$) with standard deviation ($SD=9.79$), and the group of over 50 years old reported a mean ($M=41.16$) with standard deviation ($SD=7.83$). An ANOVA test between the means gave $F(3,461) = 0.492$ at $p=0.042$. As $p < 0.05$, the results indicated that there were statistical significant differences in the attitudes mean groups. Further, Tukey's tests HSD for the multiple comparisons indicated that the differences in the means favouring the group of 20-29 years old. The findings showed that the respondents of young age have significantly positive attitudes toward computers than the other groups.

For the self efficacy, the group of 20-29 years old reported a mean ($M=36.17$) with standard deviation ($SD=6.61$) while the group of 30-39 years old reported a mean ($M=32.85$) with standard deviation ($SD=7.97$), the group of 40-49 years old reported a mean ($M=33.32$) with standard deviation ($SD=8.30$), and the group of over 50 years old reported a mean ($M=31.03$) with standard deviation ($SD=7.04$). An ANOVA test between the means gave $F(3,461) = 0.315$ at $p=0.011$. As $p < 0.05$, the results indicated that there were statistical significant differences in the computer self efficacy mean groups.

Further, Tukey's tests HSD for the multiple comparisons indicated that the differences in the means favouring the group of 20-29 years old as shown in Table 8. The findings showed that the respondents of young age have significantly higher levels of self efficacy than the other groups.

For the anxiety, the group of 20-29 years old reported a mean ($M=34.35$) with standard deviation ($SD=9.01$) while the group of 30-39 years old reported a mean ($M=36.24$) with standard deviation ($SD=8.63$), the group of 40-49 years old reported a mean ($M=35.40$) with standard deviation ($SD=8.24$), and the group of over 50 years old reported a mean ($M=37.09$) with standard deviation ($SD=8.04$).

An ANOVA test between the means gave $F(5,368) = 1.315$ at $p=0.075$. As $p > 0.025$, the results indicated that there were no statistical significant differences in the computer anxiety mean groups as shown in Table 9. The findings showed that the age did not significantly favour respondents on the anxiety among the four age groups.

Discussion and Implications

School teachers need to be able to use computers in education. This study extends the research regarding gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers.

Gender

This study found significant gender differences in computer usage, computer competence, computer self-efficacy and anxiety among teachers. Regarding gender differences in the level of computer use among teachers, the results of the T-test indicated that there was a statistically significant difference favoring male teachers. Male teachers use computers more than female teachers. This is in parallel with the work of Ocaik and Akdemir (2008) and Van-Braak, Tondeur and Valcke (2004) who claimed that male teachers tend to use computer as an instructional tool more than female teachers. For computer competence, the findings revealed that there was statistically significant difference in the level of computer competence between male

and female teachers favoring males groups. Male teachers had a higher level of computer competence more than female teachers do. The findings of this study are in accordance with past research that indicates male teachers have greater computer competence than did females (Idowu, et al., 2004; Russell & Bradley, 1997). Regarding gender differences in attitudes towards computer, the findings revealed that there was no statistically significant difference in the attitudes between males and females teachers. This may be partly due to the fact that the respondents believe that computer applications would improve the process of teaching and learning. This is in parallel with the work of Teo (2008) who claimed that exhibited same levels of attitudes towards computers usage.

Moreover, the finding related to gender differences in computer self-efficacy among teachers revealed that there was statistically significant difference in the level of self efficacy favoring males. In other words, male teachers have a higher degree of computer confidence than do female teachers. The current finding is in parallel with that reported by Butler (2000). Finally, regarding computer anxiety among teachers, the findings showed that there was statistically significant difference in the level of anxiety favoring female teachers. In other words, female teachers have higher computer anxiety than male teachers did. This is in parallel with the work of McIlroy et al., (2001) who claimed that females showed more anxiety towards computers than males. Overall, the findings of this study indicate that gender is a significant indicator of differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers. Consistent with previous research, the data show that for every computer variable in this study, males score significantly higher than females.

Age Differences

Age results showed that there were significant differences in the computer usage, computer competence, attitudes towards computer and computer self-efficacy among teachers favouring the group of 20-29 years old. This may be partly due to the fact that younger teachers use computers longer, have better computer knowledge and skills, more confident in using computer and have positive attitudes towards computer than older teachers. These results can be explained by differences in the recent computer education in Jordan universities, where pre-service teachers must attend a computer courses that covers the basic principles of computers applications. On the contrary, the findings showed that teachers' ages did not significantly favour respondents on the level of anxiety among the four age groups. The current finding on the age differences in the level of computer usage is in line with previous research (Appiarius, Marr, Morote, & Fitzgerald, 2010; Jennifer, 1994; Varner, 2003).

Conclusions

The purpose of this study was to examine gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers. The results of the study showed a significant gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety among teachers. In general, the findings of this study support the findings of much of the research conducted in this area. According to the statistical analysis the following conclusions can be made:

1. Male and female teachers should have the opportunity to access all the technological resources needed whenever they want;

2. Reward systems are also important motivators for diffusion of technology usage. Both teachers and students should be encouraged for technology usage;

3. Educational institutions must ensure that the necessary training related to computer use is provided to both male and female teachers;

4. Schools administrators need to ensure that the supports are available to teachers when they want to use computer;

5. The Ministry of Education should increase numbers of computers available to teachers, connect schools to the Internet, provide more educational software, upgrade teachers' computer competence, and conduct more workshops and training programs to overcome computer anxiety among teachers and to develop teachers' computer competence, and;

6. More research on gender and age differences in computer usage, competence, attitudes, self-efficacy, and anxiety is needed to understand how teachers use computers in the class environment.

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Table 1: The Distribution of Respondents by Gender and Age Groups

Gender	Frequency	Percent
Male	242	52.0
Female	223	48.0
Age		
20-29	147	31.6
30-39	165	35.5
40-49	122	26.2
>50	31	6.7
Total	465	100%

Table 2: Number of Items, Reliability Assessment and Instrumentation References

Variables	No. of Items	Cronbach alpha (α)	Mean	SD
Computer Use	13	.90	31.86	6.17
Computer Competence	11	.96	25.99	7.74
Attitudes towards Computer	15	.85	42.70	9.36
Computer Self-Efficacy	15	.90	33.26	8.22
Computer Anxiety Scale	11	.95	35.55	8.59

Table 3: Means, Standard Deviation, and T-test Results of the Research Variables based on Gender Groups

Variables	Gender	Mean	SD	N	Levene's Test for Equality of Variances		t-test for Equality of Means		
					F	Sig.	t	df	Sig.
Computer Use	Male	33.91	6.91	242	0.926	0.336	-3.518	463 1	0.000*
	Female	30.42	5.11	223					
Competence	Male	27.19	8.26	242	0.345	0.557	-2.355	463 1	0.019*
	Female	25.87	7.55	223					
Attitude	Male	38.22	9.77	243	1.951	0.163	-1.016	463 1	0.088
	Female	37.50	9.39	223					
Self-efficacy	Male	34.74	8.19	242	0.721	0.396	-1.732	463 1	0.042*
	Female	32.52	7.14	223					
Anxiety	Male	34.05	7.37	242	1.367	0.243	1.683	463 1	0.037*
	Female	36.82	8.83	223					

Table 4: Test of Homogeneity of Variances for the Variables by Age Groups

Variables	F	df1	df2	Sig.
Level Of Use	0.394	3	461	0.757
Competence	0.540	3	461	0.655
Attitude	0.702	3	461	0.551
Self-efficacy	1.925	3	461	0.125
Anxiety	2.186	3	461	0.101

Table 5: Means, standard deviations, and results of analysis of variance (ANOVA) on the computer usage by age groups

Computer Use	Mean	Std. Deviation	N	ANOVA	Tukey Summary
20-29 years	33.12	6.12	147	F (3,461) = 0.372 P = 0.018	20-29 years group over all others
30-39 years	31.52	5.83	165		
40-49 years	31.24	6.52	122		
Over 50 years	30.26	6.14	31		

Table 6: Means, standard deviations, and results of analysis of variance (ANOVA) on the competence by age groups

Competence	Mean	Std. Deviation	N	ANOVA	Tukey Summary
20-29 years	28.43	7.08	147	F (3,461) = 0.426 P = 0.037	20-29 years group over all others
30-39 years	25.54	7.61	165		
40-49 years	26.40	8.07	122		
Over 50 years	24.74	6.97	31		

Table 7: Means, standard deviations, and results of analysis of variance (ANOVA) on the attitudes age groups

Attitudes	Mean	Std. Deviation	N	ANOVA	Tukey Summary
20-29 years	45.59	6.81	147	F (3,461) = 0.492 P= 0.042	20-29 years group over all others
30-39 years	42.61	9.30	165		
40-49 years	43.36	9.79	122		
Over 50 years	41.16	7.83	31		

Table 8: Means, standard deviations, and results of analysis of variance (ANOVA) on the self efficacy by age groups

Self efficacy	Mean	Std. Deviation	N	ANOVA	Tukey Summary
20-29 years	36.17	6.61	147	F (3,461) = 0.315 P= 0.011	20-29 years group over all others
30-39 years	32.85	7.97	165		
40-49 years	33.32	8.30	122		
Over 50 years	31.03	7.04	31		

Table 9: Means, standard deviations, and results of analysis of variance (ANOVA) on the anxiety by age groups

Anxiety	Mean	Std. Deviation	N	ANOVA	Tukey Summary
20-29 years	34.35	9.01	147	F (3,461) = 1.315 P= 0.075	—
30-39 years	36.24	8.63	165		
40-49 years	35.40	8.24	122		
Over 50 years	37.09	8.04	31		