Examining instructors' self-efficacy perceptions towards computers

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Abstract

In this study, instructors' self-efficacy perceptions towards computers are examined, in terms of variables such as age, gender, employment status, teaching experience and computer skills. The current study employed a cross-sectional survey design. The data was gathered from 172 police instructors, who work in 28 Police Vocational Schools of Higher Education across Turkey. The data was collected by administering "The Computer Self-efficacy Perception Scale". A significant difference was found between the self-efficacy perceptions of instructors and their computer skills. In addition, there were no significant differences between the instructors' self-efficacy perceptions and their age, gender, employment status or teaching experience. This pioneering study was carried out to determine the self-efficacy perceptions of police instructors and has had some implications regarding the planning of police trainer development training.

Keywords: self-efficacy, self-efficacy perceptions, training, education, police education.

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1. Introduction

Technological advancements has brought society into a digital environment, and they influence every aspect of our lives. This progress provides numerous opportunities for criminals, requiring new tools and methodologies to deal with them appropriately. In this context, the greater use of computers and computer-based technologies by police departments implies a larger, increasingly more complex and highly educated police service (Garicano & Heaton, 2007). Therefore, training creative, productive and innovative officers, capable of performing their duties and assignments professionally in today's highly demanding society has become one of the fundamental goals of contemporary police training institutions.

The need for police officers with the qualities required in today's society, has led the Turkish National Police Service to establish links with both Police Training Centres (PTC) for university graduates and Police Vocational Schools of Higher Education (PVSHE) for high school graduates. In these educational institutions, the teaching is carried out within the framework of the course programmes developed by the Police Academy. The teaching staff at the Police Vocational Schools of Higher Education are employed in accordance with article 22 of the Police Higher Education Law. In this context, instructors are mainly comprised of permanent police and civilian instructors, as well as assigned (part time) instructors from the police service. In addition, university instructors or contracted instructors, such as members of the law enforcement agency, other public servants and self-employed experts, may also be assigned as instructors at PVSHE. In this study, the use of the word "instructor" is only used to refer to police staff and civilian instructors.

Police cadets are given theoretical and practical training in different subjects at the basic police training institutions. Nevertheless, there are many research findings, which emphasise the importance of the use of computers during the teaching and learning process. This enhances better learning, increases retention and fills the gap between theory and practice, which is considered one of the major problems in police training (Semerci, 1999; Ozmen & Denktas, 2011). Unfortunately, many police managers and instructors still believe that the use of computers is superfluous to teaching vocational subjects, such as carrying out searches, making arrests, driving, shooting, crowd control and bomb disposal.

Contrary to the notion that computer technologies are not necessary in teaching vocational subjects, there are many examples, ranging from the effective use of power point presentations and multimedia tools to different simulation systems, which emphasise the importance of the use of technology in police education. The use of computer based technologies, such as interactive multimedia tools, simulations, 3D scenarios and video solutions, in police education are vitally important, not only for improving learning and retention, but also for minimising the potential risks involved in teaching and practicing some of the critical topics.

The National Centre for Applied Learning Technologies (NCALT) reveals one of the admirable uses of new technologies in police training. The NCALT continually evaluates the potential of new technologies and ideas to improve learning and performance in a wide variety of subjects in police education. Another good initiative is to create more immersive, scenario-based learning on screen, which would be delivered as part of classroom training and enable learners to see the consequences of their decisions (New Technologies, 2015). Educational Simulator Platforms (ESP), such as interactive shooting ranges, help to improve police cadets' judgment and decision-making abilities, while driver simulations provide increased capabilities to enhance the cognitive skills of students (Atkins & Norris, 2011). There are many other tactical technological aids to improve and enhance police cadets' required skills and to increase their awareness of the relevant subjects.

Atkins and Norris (2011) argued that technologies allow the instructors to deliver training more effectively, and to create experiential learning opportunities through students' interaction with simulations. In his study, Can (2010) deliberated the importance of technology for instructors. Accordingly, the purposeful use of technologies allow them to display their skills and abilities, and also

increase the interest and motivation of learners. Likewise, Celik and Yesilyurt (2013) highlighted that the use of technological devices in education affects students' academic achievements and attitudes in a positive way.

Taking into account the potential benefits of the integration of technology in police education in Turkey, police training institutions are equipped with computers, laptops, projectors, a high speed internet connection, smart classrooms and digital course materials. However, providing technology does not guarantee that police instructors will utilise them appropriately. As pointed out by Kurt (2013), the success of the integration of technology in educational settings depends mostly on trainers' determination and abilities.

It is obvious that there are several factors, which influence teachers' decisions to use information technologies; nevertheless, teachers' enthusiasm to use technology in education is very important (Mumtaz, 2000). Therefore, they need to be aware of the importance and consequences of the use of technology during the teaching and learning process.

Sugar, Crawley and Fine (2004) pointed out that understanding teachers' belief in technology plays an important role in the successful adoption of technology. Likewise, Soylemez and Oral (2013) underlined the correlation between teachers' self-efficacy perceptions and their abilities to use these technologies. Subject to its critical role in changing and affecting individuals' behaviours, self-efficacy perceptions are adapted into various fields and disciplines (Akkoyunlu & Orhan, 2003; Jacob & Jolly, 2013). In this context, it is believed that police instructors' self-efficacy perceptions towards computers ominously affect their use of computers in police education.

1.1 Self-efficacy Perception

Self-efficacy perception is a concept, which explains how people feel, how they think, how they motivate themselves and how they behave. Self-efficacy perception, developed in the field of social psychology, is defined as the judgment of an individual against himself/herself about his/her capacity to organise and perform necessary activities, in order to achieve a certain performance (Bandura, 1999). Compeau and Higgins (1995) state that self-efficacy perception towards computers is the perception of an individual towards their ability to fulfill a task with computers. It has been clearly observed that individuals, whose self-efficacy perceptions towards computers are high, are enthusiastic about using computers and related technologies more effectively in the learning-teaching processes and participating in activities involving computers (Compeau & Higgins, 1995; Hill, Smith & Mann, 1987).

Research in this field indicated that individuals with high self-efficacy perceptions are more patient and persistent regarding solutions to problems, and can overcome difficulties involving computers more easily (Akkoyunlu & Orhan, 2003; Askar & Umay, 2001; Bandura, 2009; Kurbanoglu & Akkoyunlu, 2002). When discussed from this perspective, it is accepted that self-efficacy perception is an important topic, which needs to be handled in education (Askar & Umay, 2001). It is stated that self-efficacy perception towards computers is an important factor for teachers in understanding the correlation between the frequency of individuals' use of computers and their achievements (Cassidy & Eachus, 2002), and contributes significantly in terms of using computers more effectively and efficiently (Compeau & Higgins, 1995; Hill et al., 1987). Self-efficacy perception towards computers significantly affects the use of computers in the classroom by instructors (Seferoglu & Akbiyik, 2005). All of this demonstrates that self-efficacy perception towards computers is an important matter in police education, which cannot be overemphasised.

When analysed, it is clear that many self-efficacy related studies focus on the self-efficacy perceptions towards computers of instructors, teachers, teacher trainees and students. Among these studies, some of them examined the self-efficacy perceptions of teachers towards computers according to variables, such as gender, age, experience, having a computer and the frequency of using

computers (Keser & Bayir, 2009). An analysis of the literature on this subject reveals that there is not a study on the factors, self-efficacies and perceptions, which affect the computer use by instructors during the police training process. For this reason, this study is needed to determine the self-efficacy perceptions towards computers of police instructors, who are expected to use information technologies effectively in police education. The findings of this study will contribute to the literature regarding self-efficacy perceptions and they will provide new insight for researchers planning to study this subject. Moreover, the findings of this study may be beneficial for the planning and curriculum development phases of trainer development courses.

The fundamental goal of this study is to analyse the self-efficacy perceptions of police instructors towards computers, in terms of different variables. Within this framework, the answers to the following questions were sought: What is the age, gender and employment status of the instructors and what is their level of teaching experience, computer skills and self-efficacy perceptions? Is there a significant difference between the self-efficacy perception scores of instructors and their age, gender, employment status, teaching experience and computer skills?

2. Methods

2.1 The Research Model

The current study employed a cross-sectional design, in order to explore the self-efficacy perceptions of instructors and to see whether these perceptions differ according to different variables, such as age, gender, employment status, teaching experience, computer skills and having training regarding the use of information technologies in education. The correlational design, which is situated in the cross-sectional design, has been utilised, since its purpose is to determine the existence or degree of covariance between two or more variables (Karasar, 2006).

2.2 Population and Sample

The population of the study consisted of 277 (in total) police and civilian instructors, who work in police vocational schools of higher education that provide basic police training in Turkey. The quantitative data was collected via a survey developed by researchers and a scale developed by Askar and Umay (2001). Among the 277 participating instructors, 172 of them responded to the survey voluntarily. This return rate is accepted as sufficient for the 95 % confidence level (Cohen, Manion & Morrison, 2007).

2.3 Instruments

A questionnaire was used to collect personal data, such as age, gender, employment status, teaching experience and computer skills. In addition, a *Computer Self-efficacy Perception Scale,* developed by Askar and Umay (2001), was employed to examine instructors' self-efficacy perceptions. The participating instructors responded to a five-point Likert type scale: (1) Never, (2) Almost Never, (3) Sometimes, (4) Almost always and (5) Always. The reliability of the scale was acceptable, with Cronbach Alpha values of 0.90.

2.4 Data Analysis

Data analyses were carried out with SPSS 21.0 (Statistical Packet for Social Sciences), with a cut-off point of .05. Frequency, percentage, arithmetic mean, t-test, one-way variance analysis, the Kruskal Wallis H Test and Mann Whitney U test were administered for data analyses. While calculating the self-efficacy perceptions of instructors regarding computers, the answers scored according to a 5-point Likert scale. For the positive items, scoring was as follows; "always-5…. never-1"; and for the negative items "always-1….never-5".

3. Results

The findings obtained from the data collection instruments are discussed under three headings; the demographic features of instructors in police vocational schools of higher education, computer self-efficacy perceptions and computer self-efficacy perceptions in terms of different variables.

3.1 The Demographic Features of Instructors

The findings regarding the age, gender, employment status and the teaching experience of the participating instructors are presented in Table 1 below.

Table 1**.** The age, gender, employment status and teaching experience of the instructors

		f	%
Age	34 and under	41	23.8
	35-45	91	52.9
	46 and over	40	23.3
Gender	Female	29	16.9
	Male	143	83.1
Employment Status	Staff Police Instructor	104	60.5
	Staff Civilian Instructor	68	39.5
Teaching Experience	1-3 years	80	46.5
	4-6 years	28	16.3
	7-9 years	23	13.4
	10-12 years	20	11.6
	13-15 years	13	7.6
	16 and over	8	4.7
	Overall	172	100

When the age distribution of the instructors in the study group is analysed; it is observed that 23.8% of them were 34 years old and under, 52.9% of them were between 34 and 45 and 23.3% of them were 46 and over. The results revealed that the majority of the instructors participating in this study were male and staff police instructors. The results concerning their teaching experience illustrated that almost half of the instructors have 1-3 years teaching experience. The percentage of instructors who have at least 13 years teaching experience is 12.3 %.

The results concerning the instructors' method of learning computers and their perceptions about computer competency levels are presented in Table 2 below.

Table 2. Instructors' use of computers and computer competency levels

How they learnt to use computers	f	%
From the courses I took when I was a student	22	12.8
From a private computer course	18	10.5
In-service training courses	25	14.5
On my own	105	61.0
Other	2	1.2
The Competency Levels in using computers		
Entry	4	2.3
Basic	33	19.2
Intermediate	110	64.0
Advanced	25	14.5
Overall	172	100

As indicated in Table 2, 61 % of the instructors learnt to use computers on their own, 14.5 % of them via in-service training, 12.8 % of them via training courses and 10.5% of them via private courses. Concerning their competency levels in using computers, the results revealed that 64 % of the instructors perceive their computer competency level as intermediate, while 19.2 % of them perceive it as basic. In other words, this result shows that 83.2 % of the police instructors have either a basic or an intermediate level of computer competency. However, 14.5 % of the instructors perceive their computer competency level as advanced.

The results for the instructors' prior training regarding the use of information technologies in education are presented in Table 3 below.

Table 3. Training status regarding the use of information technologies in education

ICT Training	f	%
Yes	38	22.1
No	134	77.9
Overall	172	100

Table 3 demonstrates that three quarters of the instructors answered 'No' to the question concerning prior training regarding the use of computers and computer based technological devices in the teaching and learning process. This result was found to be noteworthy and interrelated with the other two results, in which half of the instructors (61 %) learnt to use computers on their own and 83.2 % of the instructors have either a basic or an intermediate level of computer skills.

3.2 Instructors' Self-Efficacy Perceptions towards Computers

The mean values of items, determined according to the answers given by instructors to the computer self-efficacy scale, are presented in Table 4 below.

Table 4. The mean values for instructors' self-efficacy perceptions towards computers

N	Items	+/-	Mean	SD
9.	I am angry when I am working on computers	-	4.37	.96
7.	I have a fear of doing something wrong/ pressing a wrong key while using computers.	-	4.12	1.17
17.	I get into a flap when I am faced with a sudden problem while using my computer.	-	4.06	1.00
10.	The computers sometimes put me in an awkward position.	-	3.99	.98
8.	I always believe that it is impossible for me to master computers completely.	-	3.92	1.22
18.	Most of the time, I consider the time that I spend on computers as a waste.	-	3.71	1.06
4.	If I make the necessary effort, I can solve many problems regarding computers.	+	3.49	1.02
6.	It is simple for me to write any kind of text using a computer.	+	3.42	1.14
16.	I think that I can use my computer efficiently.	+	3.31	1.15
3.	I feel competent when I am using my computer.	+	3.22	1.02
2.	I am talented in computers.	+	3.16	1.10
5.	I know what to do when I encounter a new situation while using my computer.	+	3.10	1.02
12.	I believe that I have grasped computer terms and concepts.	+	3.04	1.05
1.	I believe that I have a special talent for using computers.	+	2.99	1.21
15.	I search using my computer and make new discoveries.	+	2.80	1.17
13.	I think that my computer is almost a part from me.	+	2.44	1.20
14.	I use my computer while planning my day/time.	+	2.17	1.13

The descriptive results regarding the instructors' self-efficacy perceptions towards computers are presented in Table 5 below.

Table 5. Instructors' Self-efficacy Perceptions towards Computers

N	The lowest	The highest	Mean	SD
172	2.17	4.37	3.82	0.73

Table 5 illustrated that instructors' self-efficacy perception mean score is 3.82. This result corresponds to 'almost always-4', which is at the sufficient level.

3.3 Self-efficacy Perceptions towards Computers of Instructors According to Different Variables

The findings regarding the comparison of self-efficacy perceptions towards computers of instructors, in terms of different variables, such as age, gender, employment status, teaching experience, the method of learning computers, computer competency levels and frequency of using information and communication technologies in education, are presented below.

3.3.1 Self-efficacy perceptions towards computers according to age

The one-way analysis of variance (ANOVA) test was administered to test whether the instructors' self-efficacy perceptions towards computers differ according to age.

Table 6. ANOVA results for self-efficacy towards computers in relation to age

The Source of the Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.045	2	.523	.978	.378
Within Groups	90.367	169	.535		
Overall	91.413	171			

Table 6 revealed that there is no significant difference between instructors' self-efficacy perceptions towards computers and their age [$F_{(2-169)}$=.978. p>.05].

3.3.2 Self-efficacy perceptions according to gender

Independent t-test samples were employed to find out whether there is a significant difference between male and female instructors' self-efficacy perceptions towards computers. The following table demonstrates the results.

Table 7. Self-efficacy perceptions towards computers in relation to gender

Gender	N	Mean	SD	df	t	Sig.
Female	29	3.58	.73	170	-1.901	0,59
Male	143	3.86	.72			

As illustrated in Table 7, the t-test results revealed that gender does not create a significant difference in regard to instructors' self-efficacy perceptions towards computers [$t_{(170)}$ = -1.901, p>.05]. This finding shows that self-efficacy perceptions do not differ significantly in relation to gender.

3.3.3 Self-efficacy perceptions towards computers according to employment status

The results of the self-efficacy perception scores according to employment status are presented in Table 8 below.

Table 8. Self-efficacy perception scores in relation to employment status

Employment Status	N	Mean	SD	T	Sig.
Staff Police Instructor	104	3.81	.71	-.263	.790
Staff Civilian Instructor	68	3.84	.76		

As displayed in Table 8, there is no significant difference between the employment status of the instructors and their self-efficacy perceptions towards computers [$t_{(170)}$ = -.263, p>.05].

3.3.4 Self-efficacy perceptions towards computers according to teaching experience

The Kruskal Wallis H test was administered, in order to test whether there is a significant difference between the instructors' self-efficacy perceptions towards computers and their teaching experience.

Table 9. Self-efficacy perception scores in relation to teaching experience

Teaching Experience	N	Mean	df	χ^2	Sig.
1-3 years	80	87.78	5	7.042	.218
4-6 years	28	71.98			
7-9 years	23	96.22			
10-12 years	20	95.80			
13-15 years	13	92.08			
16 or more	8	64.25			
Overall	172				

The results displayed in Table 9 show that there is no significant difference between instructors' self-efficacy perception scores and their teaching experience (χ^2 =7.042, p>.218).

3.3.5 Self-efficacy perceptions towards computers according to the method of learning computers

The Kruskal Wallis H test results, illustrating the instructors' self-efficacy perceptions towards computers and their method of learning computers, are presented in Table 10 below.

Table 10. Self-efficacy perceptions towards computers according to how they learnt to use computers

How they learnt	N	Mean	df	χ^2	Sig.
The course taken as a student	80	90.95	3	4.956	.175
Private computer course	28	100.22			
In service training course	23	97.04			
On my own	20	80.81			
Overall	**172**				

The results of the analysis displayed in Table 10 revealed that there is no significant difference between instructors' self-efficacy perception scores and how they learnt to use computers (χ^2 =4.956, p>.175).

3.3.6 Self-efficacy perceptions towards computers according to instructors' level of computer skills

The results of the variance analysis regarding self-efficacy perceptions towards computers and instructors' level of computer skills are shown in Table 11 below.

Table 11. Self-efficacy perception scores in relation to computer skills

Level of computer skills	N	Mean	df	χ^2	p	Significant difference
Entry (a)	4	23.00	3	39.92	.000	d>c>b>a
Basic (b)	33	62.61				
Intermediate (c)	110	86.22				
Advanced (d)	25	129.44				
Overall	172					

The results shown in Table 11 indicated that there is a significant difference between instructors' self-efficacy perceptions towards computers and their level of computer skills (χ^2 =39.926, p>.000). In other words, the instructors' self-efficacy perceptions towards computers change significantly depending on their level of computer skills. The groups were compared in pairs by using the Mann Whitney U test to determine the origin of the difference regarding the instructors' self-efficacy levels and their perceived level of computer skills.

The Mann Whitney U test results show that there was no significant difference between the self-efficacy perceptions of instructors who have entry and basic levels of computer skills. However, a significant difference (p=.001) was found between instructors who have entry and intermediate levels of computer skills. Those with an intermediate level of computer skills have a higher self-efficacy perception. Likewise, the self-efficacy perceptions of instructors with an advanced level of computer skills were found to be higher than those with entry level computer skills. The Mann Whitney U test results indicated that the self-efficacy perceptions of instructors who have intermediate and advanced levels of computer skills are higher than those who have basic level computer skills.

3.3.7 Self-efficacy perceptions towards computers according to prior training regarding the use of information and communication technologies in education (ICT)

The results between instructors' self-efficacy perception scores and their training regarding the use of information and communication technologies in education were analysed using the t-test. The results are shown in Table 12 below.

Table 12. Self-efficacy perceptions in relation to prior training regarding the use of ICT in education

IT Training	N	Mean	SD	DF	T	Sig.
Yes	38	4,24	.590	170	4.171	.000
No	134	3,70	.726			

As presented in Table 12, there is a significant difference between self-efficacy perceptions towards computers and the training instructors' received regarding the use of information and communication technologies in education [$t_{(170)}$ = 4.171, p<.01]. This finding revealed that having prior training regarding the use of information and communication technologies in education has a positive influence on instructors' self-efficacy perceptions.

4. Discussion and Recommendations

This study examined the self-efficacy perceptions towards computers of police instructors in relation to age, gender, employment status, teaching experience and computer skills. The findings revealed that more than half of the participating instructors are between 35 and 45 years of age, and have teaching experience of between one and three years. Furthermore, most of them are male. The study also revealed that more than half of the participating instructors learnt to use computers on their own. In addition, two thirds of them perceived that their level of computer skills was at the basic or intermediate level. The findings of the study illustrated that instructors commenced their professional career without having sufficient training in the effective use of information and communication technologies in education.

Staff police instructors are generally chosen from personnel, who are at the 2nd and 3rd degree police chief superintendent rank. These personnel normally leave the instructor position after a few years following promotion to the next rank up. In other words, staff police instructors, most of whom start teaching without having any teaching experience, stop teaching after being an instructor for a couple of years. The facts reveal that most of the instructors have either basic or intermediate levels of computer skills, and that they have not received any training on the effective use of information and communication technologies in education. Furthermore, more than half of them learnt to use computers on their own. This information indicates the necessity for both pre-service and in-service training on the effective use of information and communication technologies in police education.

The research findings concluded that instructors' self-efficacy perceptions towards computers are at a good level. This perception level corresponds favourably with the perception levels obtained in studies, in which the self-efficacy perceptions of teacher trainees towards computers were analysed (Keser and Bayir, 2009), and in studies where the self-efficacy perceptions of teachers towards computers were analysed (Seferoglu and Akbiyik 2005).

This study also displayed that there is no significant difference between instructors' self-efficacy perceptions and their age. There is no possibility for comparison, as there is no other study on this subject, in which the perceptions of police instructors at vocational schools of higher education were analysed. However, the findings of this study were found to be similar to the studies carried out by Tuncer and Tanas (2011) and Yilmaz Gercek, Koseoglu and Soran (2006), in that there is no significant correlation between teachers' self-efficacy perceptions and their age. On the other hand, there are also research findings in which teachers' self-efficacy perceptions differed according to their age (Asan, 2003; Birisci, 2011; Erkan, 2004).

The research results also revealed that there is no significant difference between self-efficacy perceptions towards computers and gender. An analysis of the literature on this subject shows that there are studies, which concluded that there is no significant difference between teachers' self-efficacy perceptions towards computers and gender (Akkoyunlu & Orhan, 2003; Busch, 1995; Soylemez & Oral, 2013; Tuncer & Tanas, 2011; Yilmaz et al., 2006). Nevertheless, studies by Birisci (2011), Cetin (2008), Keser and Bayir (2009), Kocasarac (2003), Usluel and Seferoglu (2004) point towards a difference between teachers' self-efficacy towards computers and gender.

This study illustrated that there is a significant difference between instructors' self-efficacy perceptions towards computers and their computer skills. Accordingly, a significant difference was found between instructors who have entry and intermediate levels of computer skills. Those with an

intermediate level of computer skills have a higher perception. The results also indicated that the self-efficacy perceptions towards computers of instructors who have intermediate and advanced levels of computer skills are higher than those that have a basic level of computer skills. In addition, self-efficacy perceptions towards computers of instructors with an advanced level of computer skills were found to be higher than those with entry and intermediate levels of computer competency. There is also a significant correlation between instructors' self-efficacy perceptions towards computers and their having prior training on the use of information and communication technologies in education.

In light of the findings obtained by this study, the following suggestions were made to improve the self-efficacy perceptions towards computers of police instructors:

Police instructors' self-efficacy perceptions towards computers and their computer skills and competencies play an important role concerning effective police training. They also help fill the gap between theory and practice. Regardless of the subject they are teaching, which may include driving, firearms, defensive tactics, communication skills, public relations, body/vehicle/home search, terror operations or bomb disposal training, computer based technologies are excellent media to discuss malpractices and best practices before real case applications in the field. From this point of view, all of the instructors, including those teaching hands-on skills, may utilise technology to achieve the desired results in police education. For this reason, competencies in regard to computer literacy, teaching with computers and using computer based technologies during basic, in-service and management training are to be specified in advance. In this context, police instructors are to be taught the potential of computer based technologies in the police education process. Thus, all police instructors are to be trained in accordance with the specified competencies.

Each police instructor assigned to police training institutions should receive training on computer literacy, technology literacy and the effective use of information and communication technologies in police education. Taking into consideration the rapid developments in information and communication technologies, police instructors and other administrative staff should be trained periodically.

References

Akkoyunlu, B., & Orhan, F. (2003). Bilgisayar ve Ogretim Teknolojileri Egitimi (BOTE) Bolumu ogrencilerinin bilgisayar kullanma oz yeterlik inanci ile demografik ozellikleri arasındaki iliski. *The Turkish Online Journal of Educational Technology-TOJET*, *2*(3), 1-11.

Asan, A. (2003). Computer technology awareness by elementary school teachers: A case study from Turkey. *Journal of Information Technology Education*, *2,* 150-163.

Askar, P., & Umay, A. (2001). Ilkogretim Matematik ogretmenligi ogrencilerinin bilgisayarla ilgili oz-yeterlik algisi. *Hacettepe Universitesi Egitim Fakultesi Dergisi*, *21*, 1-8.

Atkins, V., & Norris, W. (2011). Simulations and technology for training. *International Police Training Journal*, *2,* 3-7.

Bandura, A. (1999). A social cognitive theory of personality. Retrieved February 23, 2015, from: http://www.uky.edu/~eushe2/Bandura/Bandura1999HP.pdf

Bandura, A. (2009). Cultivate self-efficacy for personal and organizational effectiveness. Retrieved February 24, 2015, from: http://www.uky.edu/~eushe2/Bandura/Bandura2009Locke.pdf

Birisci, S., Metin, M., & Demiryurek G. (2011). Ilkogretim ogretmenlerinin bilgisayar ve internet kullanmaya yonelik tutumlarının incelenmesi: Artvin Ili Ornegi. *Egitim Teknolojileri Arastırmaları Dergisi*, *2*.

Busch, T. (1995). Gender differences in self-efficacy and attitudes toward computers. *Journal of Educational Computing Research*, *12*(2), 147-158.

Can, S. (2010). Attitudes of pre-service teachers from the department of elementary education towards the effects of materials use on learning. *The Turkish Online Journal of Educational Technology-TOJET*, *9*(2), 46-54.

Cassidy, S., & Eachus, P. (2002). Developing the computer user self-efficacy scale: investigating the relationship between computer self-efficacy, gender and experience with computers. *Journal of Educational Computing Research*, *26*(2), 133-153.

Celik, V., & Yesilyurt, E. (2013). Attitudes to technology, perceived computer self-efficacy and computer anxiety as predictors of computer supported education. *Computers and Education*, *60*, 148–158.

Cetin, B. (2008). Marmara Universitesi sınıf ogretmeni adaylarının bilgisayarla ilgili oz-yeterlik algılarının incelenmesi. *Ziya Gokalp Egitim Fakultesi Dergisi*, *11,* 101-114.

Cohen, L., Manion, L. & Morrison, K. (2007). *Research Methods in Education*. 6th ed. London: RoutledgeFalmer.

Compeau, D. R. & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, *19*(2), 189-211.

Erkan, S. (2004). Ogretmenlerin bilgisayara yonelik tutumları uzerine bir inceleme. *Manas Universitesi Sosyal Bilimler Dergisi*, *12*.

Garicano, L., & Heaton, P. (2007). *Do computers help police fight crime*? Centre Piece. Retrieved February 03, 2015, from: http://cep.lse.ac.uk/pubs/download/cp247.pdf

Hill, T., Smith, N. D., & Mann, M. F. (1987). Role of efficacy expectations in predicting the decision to use advanced technologies: The case of computers. *Journal of Applied Psychology*, *72,* 307-313.

Jacob, C., & Jolly, J. (2013). Impact of Self Efficacy on Motivation and Performance of Employees. *International Journal of Business and Management*, *8*(14), 80-88.

Karasar, N. (2006). *Bilimsel arastırma yontemi*. Ankara: Nobel Yayın Dagıtım.

Keser, H., & Bayir, S. (2009). Ogretmen adaylarının bilgisayara iliskin oz-yeterlik algıları. Paper presented at the 3. *International Computer and Educational Technologies Symposium*, 475-481.

Kocasarac, H. (2003). Bilgisayarların ogretim alanında kullanımına iliskin ogretmen yeterlilikleri. *The Turkish Online Journal of Educational Technology-TOJET*, *2*(3).

Kurbanoglu, S., & Akkoyunlu, B. (2002). Ogretmen adaylarına uygulanan bilgi okuryazarlıgı programının etkililigi ve bilgi okuryazarlıgı becerileri ile bilgisayar oz-yeterlik algısı arasındaki iliski. *Hacettepe Universitesi Egitim Fakultesi Dergisi*, *22,* 98-105.

Kurt, S. (2013). Examining Teachers' Use of Computer-Based Technologies: A Case Study. *Education and Information Technologies*, *18*, 557–570.

Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A review of the literature. *Journal of Information Technology for Teacher Education, 9*(3), 319-342.

New Technologies (2015). Retrieved February 23, 2015, from: http://www.ncalt.com/about_us/new_technologies.asp

Ozmen, F., & Denktas, Y., (2011). Turkiye'de Polis Meslek Yuksek Okullarinin bilisim teknolojisini kullanmadaki etkililigi. *Paper presented at 6. International Advanced Technologies Symposium. Elazig*

Seferoglu, S. S., & Akbiyik, C. (2005). Ilkogretim ogretmenlerinin bilgisayara yonelik oz-yeterlik algilari uzerine bir calisma. *Egitim Arastirmalari-Eurasian Journal of Educational Research*, *19,* 89-101.

Semerci, A. (1999). Ogretim amacli bir coklu ortam yazilimi gelistirilmesi, uygulanmasi ve degerlendirilmesi. Unpublished master's dissertation, Ankara University.

Soylemez, N. H., & Oral B. (2013). Ogretmen adaylarinin bilgisayara iliskin oz-yeterlik algilarinin cesitli degiskenler acisindan incelenmesi. *Bartin Universitesi Egitim Fakultesi Dergisi*, *2*(1), 44-60.

Sugar, W., Crawley, F., & Fine, B. (2004). Examining teachers' decisions to adopt new technology. *Educational Technology and Society*, *7*(4), 201–213.

Tuncer, M., & Tanas, R. (2011). Egitim fakultesi ogrencilerinin bilgisayar oz-yeterlik algilarinin degerlendirilmesi, *Adiyaman Universitesi Sosyal Bilimler Enstitusu Dergisi*, *4*(6).

Usluel, Y., & Seferoglu, S. S. (2003). Egitim fakultelerindeki ogretim elemanlarinin bilgisayar kullanimi ve oz-yeterlik algilari. Paper presented at the ODTU Kultur ve Kongre Merkezi, Ankara. May, 21-23.

Yilmaz, M., Gercek, C., Koseoglu, P., & Soran, H. (2006). Hacettepe universitesi biyoloji ogretmen adaylarinin bilgisayarla ilgili oz-yeterlik inanclarinin incelenmesi. *Hacettepe Universitesi Egitim Fakultesi Dergisi*, *30,* 278-287.