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The Relationship Between Attitude and Perceived Self Efficacy of Pre-service English Teachers on Computer-Assisted Instruction*

İngilizce Öğretmen Adaylarının Bilgisayar Destekli Öğretime İlişkin Tutumları ve Öz-yeterlik Algıları Arasındaki İlişki

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Abstract: The main purpose of this study was to determine the relationship between attitude and perceived self-efficacy of pre-service English teachers on computer-assisted instruction. Besides, the attitude and perceived self-efficacy of pre-service English teachers on computer-assisted instruction according to their gender and class level were also examined within the context of this study. Correlational research model was conducted in the process of the study. The research was conducted with 195 pre-service English teachers studying English Language Teaching at the education faculties of Anadolu University and Eskisehir Osmangazi University in 2014-2015 academic year. Convenience sampling method was used to form the participants of the study. The data of the study was collected by using "The Attitude Scale Toward Making Computer-Supported Education" and "Self-efficacy Scale in relation to Computer-Based Education" developed by Arslan (2006). The findings of the study showed that there was a significant positive relation at a medium level between the attitude and perceived self-efficacy of the participants on computer assisted instruction. It was also revealed that pre-service English teachers had positive attitudes toward computer-assisted instruction and they showed high self-efficacy on the subject. Moreover, their attitude and perceived self-efficacy did not change according to gender and class level variables.
Key words: pre-service English teacher, attitude, self-efficacy, computer assisted instruction.

Öz: Bu çalışmanın temel amacı İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları arasındaki ilişkiyi belirlemektir. Ayrıca, İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları belirlenerek cinsiyet ve sınıf düzeyi değişkenleri açısından incelenmiştir. İlişkisel desende tasarlanan bu çalışmanın katılımcılarını kolaylı örneklem yöntemi ile belirlenen ve Eskişehir Osmangazi Üniversitesi ile Anadolu Üniversitesi İngilizce öğretmenliği bölümünde öğrenim gören 195 öğretmen adayı oluşturmaktadır. İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarına ve öz-yeterlik algılarına ilişkin verileri toplamak amacıyla Arslan (2006) tarafından geliştirilen "*Bilgisayar Destekli Eğitim Yapmaya İlişkin Tutum Ölçeği*" ve "*Bilgisayar Destekli Eğitim İle İlgili Öz-yeterlik Algısı Ölçeği*" kullanılmıştır. Verilerin analizinde öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ile öz-yeterlik düzeyleri arasındaki ilişkinin incelenmesinde Pearson Momentler çarpım korelasyonu kullanılmıştır. Genel olarak İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarını ve öz-yeterlik algılarını belirlemek amacıyla betimsel istatistiklerden (ortama, frekans, yüzde, standart sapma) faydalanılırken; tutumların ve öz-yeterlik algılarının cinsiyet ile sınıf düzeyi değişkenlerine göre değişip değişmediklerini tespit etmek amacıyla t-testi ve ANOVA testi kullanılmıştır. Araştırma sonucunda İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ile öz-yeterlik algıları arasında istatistiksel olarak anlamlı, orta düzeyde ve pozitif yönde bir ilişki tespit edilmiştir. İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarının ve öz-yeterlik algılarının cinsiyet ile sınıf düzeyi değişkenlerine göre farklılık göstermedikleri ortaya çıkmıştır. Elde edilen bu bulgular ilgili literatürle desteklenecek bir biçimde ayrıntılı olarak tartışılmış ve konu ile ilgili önerilere yer verilmiştir.
Anahtar Kelimeler: İngilizce öğretmen adayları, tutum, öz-yeterlik, bilgisayar destekli öğretim

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Introduction

Technology has witnessed a great development and proliferation in our age. In parallel with the technological advancements, many technological devices, especially the computers, have taken place in education. The use of computers in education is very advantageous in many ways. For instance, the use of computers in classrooms increases the motivation and thereby the academic success of students and it helps to enrich the teaching and learning activities (Banister, 2010; Brooks-Young, 2002). Besides, computer technology supports learning and it is especially useful in developing the higher order skills of critical thinking, analysis and scientific inquiry (Roschelle, Pea, Hoadley, Gordin & Means, 2001; Speaker, 2004). The findings of meta-analysis by Kulik and Kulik (1991) have also indicated that computer-based instruction usually produces positive effects on students-from kindergarten pupils to adults. Moreover, it reduces the needed time for instruction and effects student attitudes toward teaching and computers. Due to its numerous advantages, it has become a necessity for teachers to make use of computers in instruction. Computer-assisted instruction is the use of computers as a sub-tool in instruction to enrich the teaching-learning activities and to increase the quality of them (Akkoyunlu, 1998). It is necessary to integrate technology into programs to equip students with necessary knowledge and skills for 21st century.

Governments in most developing countries have initiated national programs to introduce technology into education (Albirini, 2006). Turkish Ministry of National Education (MoNE) has also taken some steps since 1990s to integrate technology into education by taking into consideration the advantages of computer use in instruction. One of these steps, FATIH Project, was taken in 2010 and FATIH is the abbreviation for "Increasing Opportunities and Improvement of Technology Movement" in Turkish. This project is a process of an educational reform being implemented by the government. Twelve year compulsory education (4 years of primary school + 4 years of secondary school + 4 years of high school) has been introduced in Turkish state school system, and this educational reform along with the FATIH Project give an opportunity to review and reform foreign language, especially English, learning and teaching. The findings of a report, called "Turkey National Needs Assessment of State School English Language Teaching" and published as a result of a collaboration between the British Council and TEPAV in 2013, have indicated that Turkey consistently ranks very low on various measures of English language speaking. Some of the reasons behind this low level of success have been observed in the report as the teaching of English as a subject rather than as a language of communication; teacher-centered and grammar based approach in language classrooms; seating arrangement which is not appropriate for communicative language practice; textbooks and curricula which fail to take into consideration the varying levels and needs of students. Recently taken steps by MoNE can be regarded as a significant reform to take some precautions for some of the problems stated in the report. While twelve year compulsory education (4+4+4) provides early introduction of foreign language learning from grade two, FATIH Project gives opportunities to communicate and encourages flexibility in language learning to meet different abilities of students. Both tablet computers distributed to each student/teacher and interactive boards made available in every classroom within FATIH Project make it possible to develop technology in schools, to enable equality of opportunity, to personalize textbook content and thus provide interest and motivation at various abilities and to enrich teaching-learning environment by addressing more sense organs by the help of technology use in instruction (MoNE, 2011).

Along with the implementation of FATIH Project, technology has been made available in almost all Turkish state schools. However, it has been stated in some recent research (Güven, 2012; Kayaduman, Sırakaya & Seferoğlu, 2011; Kurt, Kuzu, Dursun, Güllüpınar & Gültekin, 2013) that the computers and the interactive boards provided by the project cannot be used efficiently in instruction. There are some reasons for the ineffective use of computers such as technical problems, heavy work load, inefficient training and support for teachers (Güven, 2012; Kurt, 2014). The success of technology integration into teaching and learning strongly depends on the engagement of teachers, attitudes and beliefs of them and the support given to them

(Demiraslan Çevik, Dağhan, Barin & Savran, 2015; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur & Sendurur, 2012; Wong, Teo & Russo, 2012; Şad & Nalçacı, 2015). Thus, teachers' attitudes towards technology integration can be stated as one of the variables that has an effect on the ineffective use of technology and computers in Turkey. Along with the common use of computers as teaching and learning tools in the classrooms, computer attitudes of teachers and pre-service teachers, who are the future implementers of computers in the classroom, have gained significance. Their attitudes towards computers reflect tendencies towards effective computer usage and thereby the success of the initiatives to implement new technologies like computers in instruction (Myers & Halpin, 2002).

Attitudes consist of cognitive, affective and behavioral components (Ajzen, 2005). Cognitive component of attitude is described as beliefs on an object while affective component is described as a positive or negative reaction towards the object. And behavioral component of attitude determines the acts of an individual towards the object. Shashaani, (1993) emphasizes the effect of attitudes on teachers' behaviors in their profession. The reasoned action theory of Fishbein & Ajzen (1975) and the attitude-behavior theory of Levine and Donitsa-Schmidt (1998) note that the beliefs on an object lead to an attitude on it, and this attitude leads to behavioral intentions. These intentions affect the actual behaviors of a person towards the object. From this point of view, it can be said that teachers' beliefs on computers and computer assisted instruction affect their attitudes. Positive beliefs, accordingly attitudes, on computer assisted instruction make it more likely for teachers to use computers more effectively in their classrooms (Van Acker, Buuren, Kreijns & Vermeulen, 2013). In literature, attitudes are emphasized as being one of the most essential factors towards raising the awareness of pre-service teachers on computer assisted instruction to be able to become successful in their effective use of computers (Kavanoz, Yüksel & Özcan, 2015; Shashaani, 1993). Therefore, it is significant that the teacher candidates and teachers have positive attitudes towards computers to be able to use them successfully in instruction. Another factor which has an effect on the efficient use of computers in classrooms is teachers' self-efficacy on computer assisted instruction (Kutluca & Ekici, 2010).

Bandura (2006) defines self-efficacy as one's belief on his/her capability to perform a specific behavior in a successful way. Pajares (2005) has stated that self-efficacy is not the real ability of individuals, rather it is the belief of them on what they can achieve with this ability and thus, it is a significant factor for success. Perceived self-efficacy plays an important role in affecting motivation and behavior. Human behavior can be better predicted by their belief on abilities rather than previous performances (Bandura, 1995). While it is expected for individuals with high self-efficacy to be more successful, the ones with low self-efficacy are more reluctant and unsuccessful to perform a specific task (Chang, Liu, Sung, Lin, Chen & Cheng 2014; Schunk & Zimmerman, 2003; Zimmerman, 2002). Computer self-efficacy is the perception of someone on his/her ability to use computers in the accomplishment of a task (Compeau & Higgings, 1995). Individuals with a high computer self-efficacy are able to accomplish computing tasks with less support and they use computers in classrooms more successfully. Conversely, those with lower technology self-efficacy tend to show higher levels of anxiety related to technology use in the classroom (Shu, Tu, & Wang, 2011). Moreover, technology self-efficacy is a significant predictor of a student's academic life (Vekiri & Chronaki, 2008). Therefore, the significance of having high self-efficacy level of computer use is obvious for teacher candidates and teachers to perform well in the classroom and to use computers more efficiently.

Using technology in instruction as an efficient tool is more likely to take place when embedded in an education reform that includes teacher training, curriculum, student assessment and the school's capacity for change (Roschelle, et. al., 2001). It is clear that one of the most significant elements for efficient use of computers in instruction is the teacher training. Marra (2004) argues that for teachers to be able to integrate technology effectively, training programs on national standards should be formed. It is important to ensure that the new upcoming teachers are efficient users of computers and capable of integrating technology and computers

into education. As having teachers who are efficient and competent users of educational technology is significant, the groundwork must be laid at teacher candidate's level (Wong, Teo & Russo, 2012). Self-efficacy and attitude have a central role in explaining the intention to use computer technology in instruction (Van Acker, Buuren, Kreijns & Vermeulen, 2013). Thus, pre-service teachers' attitudes and perceived self-efficacy on computer assisted instruction are significant factors to achieve success in computer supported education practice (Kutluca & Ekici, 2010). Therefore, it is thought to be necessary to understand attitudes and perceived self-efficacy of pre-service teachers as these variables are associated with technology use in classrooms in the future.

In literature, there are some studies which examine the attitudes and self-efficacy of pre-service teachers on computers and computer-assisted instruction (Arslan, 2008; Busch, 1995; Çelik & Yeşilyurt, 2012; Chau, 2001; Kavanoz, Yüksel & Özcan, 2015; Kutluca & Ekici, 2010; Pamuk & Peker, 2009; Torkzadeh & Van Dyke, 2002; Usta & Korkmaz, 2010; Yanık, 2010; Yavuz & Coşkun, 2008). In general, these studies were conducted to define the situation, the relationship between attitude and self-efficacy and the opinions of pre-service teachers on computer assisted instruction, computer attitudes and self-efficacy perceptions. However, when the participants of these studies are considered, it is recognized that there is very limited study which is implemented on English teacher candidates. As the technology beliefs and self-efficacy are the strongest factors of teacher candidates' predicted use of software in their courses in the future, identification and development of these attitudes and perceived self-efficacy on technology use is essential during teacher preparation (Kavanoz, Yüksel & Özcan, 2015). Therefore, it is essential for English pre-service teachers to have positive attitudes and high self-efficacy level for computer assisted instruction to be able to successfully implement computer assisted instruction in their classrooms. It is a necessity to examine the attitudes and perceived self-efficacy of pre-service English teachers before they set in their profession to see the present situation to take some precautions. Moreover, although there is a large body of research regarding computer assisted instruction, computer use self-efficacy and computer attitudes of teachers or teacher candidates, the number of studies which examine the relationships between computer assisted instruction attitudes and self-efficacy still leave a great deal to be desired. In accordance with this necessity, the aims of this study are to determine the relationship between attitudes and perceived self-efficacy of the pre-service English teachers on computer assisted instruction and to examine these attitudes and self-efficacy according to the teacher candidates' gender and class level. The research questions addressing these aims are:

1. Is there a relationship between pre-service English teachers' attitude and perceived self-efficacy on computer assisted instruction?
2. What are the attitude scores and self-efficacy levels of the pre-service English teachers on computer assisted instruction?
3. Do the attitude and perceived self-efficacy of the pre-service English teachers on computer assisted instruction change according to gender?
4. Do the attitude and perceived self-efficacy of the pre-service English teachers on computer assisted instruction change according to class level?

Method

Research Design

The main purpose of this study was to determine the relationship between pre-service English teachers' attitude and perceived self-efficacy on computer assisted instruction. It was also aimed to examine the attitude and perceived self-efficacy of pre-service English teachers on computer assisted instruction according to their gender and class level. In accordance with the research aim, a correlational research, which looks at existing relations between two or more variables to make better predictions (Fraenkel & Wallen, 1993), was adopted to conduct the study. In a correlational research, the aim is to find out and define the possible relations between facts

without trying to alter these facts (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2010). Moreover, a correlational research provides an opportunity to predict scores and explain the relationship among variables (Creswell, 2012). Within the context of this study, it was aimed to define the relation between attitude and perceived self-efficacy on computer assisted instruction without changing the existing situation.

Participants

The participants of the study were the pre-service English teachers who study at the undergraduate program of English Language Teaching at the education faculties of Anadolu University and Eskisehir Osmangazi University during 2014-2015 academic year. The data collection tools were distributed to the pre-service English teachers, and only the volunteers filled in the questionnaires. Therefore, convenience sampling method was adopted in this study. Convenience sampling is a statistical method which draws representative data by selecting participants because of the ease of their volunteering or easy access. Consequently, 195 English teacher candidates formed the sample of the study. The demographic data related to the participants is indicated in Table 1.

Table 1. *Distribution of the Participants*

Variables		F	%
Gender	Female	143	73.3
	Male	52	26.7
	Total	195	100
Grades	1st grade	83	42.6
	2nd grade	39	20
	3rd grade	40	20.5
	4th grade	33	16.9
	Total	195	100

Instruments

This study aimed to determine the relation between the attitude and perceived self-efficacy of pre-service English teachers on computer assisted instruction and to find out whether the attitude scores and self-efficacy levels of the participants on computer assisted instruction change according to gender and class level. Therefore an attitude scale and a self-efficacy scale were used to gather the data of the study. The Turkish form of the items in scales is given in Appendix-A at the end of the paper.

*The Attitude Scale toward Making Computer Supported Education***:** The scale developed by Arslan (2006a) was used in this study to determine the attitudes of pre-service English teachers towards computer assisted instruction. The five point Likert scale has 20 items (10 items negative and 10 items positive). The Cronbach's alpha coefficient of the scale is .93 and for this study it was calculated as .92. While the lowest score obtained from the scale is 20, the highest score is 100. To interpret the findings of the study, score intervals were determined by subtracting the lowest score from the highest one and by dividing the sum into group number [(100-20)/5]. According to this arithmetic operation, the score intervals were determined as "very negative" between 20-36; "negative" between 36.1-52; "neutral" between 52.1-68; "positive" between 68.1-84 and "very positive" between 84.1-100.

Self-efficacy Scale in relation to Computer Based Education: The scale developed by Arslan (2006b) was used to examine the self-efficacy of pre-service English teachers on computer assisted instruction. The five point Likert scale has 20 items (11 positive, 9 negative). The Cronbach's alpha coefficient of the scale is .94 and for this study it was calculated as .92. The score intervals to interpret the results of the study were determined as "very low" between 20-36; "low" between 36.1-52; "medium" between 52.1-68; "high" between 68.1-84 and "very high" between 84.1-100.

Analysis of Data

Prior to the analyses of the data, the basic assumptions were tested. In this respect, first of all, whether there was a normal distribution or not was tested, and as a result of the Kolmogorov-Smirnov test, it was seen that the distribution was normal ($p>.05$). In the study, the significance level was taken as 0.05. As the distribution was normal, parametric tests were used to analyze the data. In order to examine the relationship between attitude and perceived self-efficacy of pre-service English teachers on computer assisted instruction, Pearson product-moment correlation analysis was conducted. Descriptive statistics (frequencies, means, and standard deviations) were used to determine the pre-service English teachers' attitude and perceived self-efficacy on computer assisted instruction. While testing whether the dependent variables (attitude and self-efficacy) change according to independent variables (gender and class level), independent t-test and ANOVA were employed.

Findings

In this part of the paper the results of the data analyses are presented in accordance with the research questions. The first concern of the study is to examine the relationship between the attitude and perceived self-efficacy of the participants on computer assisted instruction. The results of the correlation analysis are shown in Table 2.

Table 2. *The Relation between the Attitudes and Self-Efficacy Levels of the Participants*

	N	R	p
Attitude on Computer Assisted Instruction Self-efficacy on Computer Assisted Instruction	194	.628	.000*

*p<.01

The results indicate that there is a significant relation between attitude and perceived self-efficacy of the pre-service English teachers on computer assisted instruction ($r=.628$; $p<0.01$). This is a medium-level, positive correlation. This finding of the study indicates that as the students have more positive attitudes on computer assisted instruction, they have higher level of self-efficacy on it as well or vice versa.

The second concern of the study is to determine the attitude scores and self-efficacy levels of pre-service English teachers on computer assisted instruction. The results are shown in Table 3.

Table 3. *The Attitude Scores and Self-Efficacy Levels of the Participants on Computer Assisted Instruction*

	N	$\bar{x}$	SD
Attitude on Computer Assisted Instruction	195	76.58	13.12
Self-efficacy on Computer Assisted Instruction	195	74.95	12.55

The findings reveal that the mean of the students' attitude scores on computer assisted instruction is 76,58. This value indicates that the students' attitudes for computer assisted instruction are *positive*. On the other hand, the mean of the students' self-efficacy levels on computer assisted instruction is 74,95. When considering the maximum score (100) from the self-efficacy scale, the revealed mean shows that self-efficacy levels of the students on computer assisted instruction are at a *high* level. Briefly stated, the participants of the study have positive attitudes and high self-efficacy levels on computer assisted instruction.

The third concern of the study is to determine whether pre-service English teachers' gender make a significant difference in their attitude and perceived self-efficacy on computer assisted instruction. The analysis results of the Independent t-test are shown in Table 4.

Table 4. *Attitude and Perceived Self-Efficacy of Participants on Computer Assisted Instruction According to Gender*

	Gender	N	$\bar{x}$	SD	T	df	*p*
Attitude	Female	143	75.54	12.42	-1.838	193	.086
	Male	52	79.42	14.63			
Self-efficacy	Female	143	73.87	12.33	-1.998	193	.494
	Male	53	77.90	12.77			

The results indicate that both female participants' scores ($\bar{x}$ =75.5; SD= 12.42) and male participants' scores ($\bar{x}$ =79.42; SD=14.63) in attitude scale on computer assisted instruction are positive. Although the mean of the male participants is higher than the females, this difference between the groups is not statistically significant (t= -1.838, p=.086>0.05). It can be concluded that the attitudes of the pre-service English teachers on computer assisted instruction do not change according to their being male or female.

The results of the independent t-test analysis for self-efficacy scale on computer assisted instruction have manifested that both female ($\bar{x}$ =73.87; SD= 12.33) and male participants ($\bar{x}$ =77.90; SD=12.77) have high level of self-efficacy on computer assisted instruction. The mean of the male pre-service English teachers is higher than that of the female participants. However, this difference is not statistically significant (t= -1.998, p=.494>0.05). The results have revealed that the self-efficacy levels of the pre-service English teachers on computer assisted instruction do not change according to their gender.

The last concern of the study is to examine the effect of participants' class level on their scores in both attitude and self-efficacy scales. The results of one way analysis of variance (ANOVA) are indicated in Table 5.

Table 5. *Comparison of the Participants' Attitude and Perceived Self-Efficacy on Computer Assisted Instruction According to Class Level-(ANOVA Test Results)*

Descriptives				ANOVA					
	N	$\bar{x}$	SD		SS	df	MS	F	p
Attitude									
1st grade	83	74,30	14,16	Between Groups	1154,516	3	384,839	2,280	,081
2nd grade	39	76,24	13,13	Within Groups	32245,650	191	168,825		
3rd grade	40	77,99	11,79	Total	33400,166	194			
4th grade	33	80,97	10,94						
Total	195	76,58	13,12						
Self-efficacy									
1st grade	83	72,65	13,89	Between Groups	1217,166	3	405,722	2,642	,051
2nd grade	39	77,52	12,22	Within Groups	29327,986	191	153,550		
3rd grade	40	74,04	10,04	Total	30545,152	194			
4th grade	33	78,79	11,03						
Total	195	74,95	12,55						

The results indicate that 4th grade pre-service English teachers' mean score ($\bar{x}$ =80,97; SD=10.94) in computer assisted instruction attitude scale is higher than that of the other groups.

All groups' mean scores show that participants' attitude for computer assisted instruction is positive. The results also manifest that as the class level increases, participants' attitudes on computer assisted instruction become more positive as well. However, these differences between groups are not statistically significant ($F_{(3-191)}$= 2.280, p=.081>0.05). It can be concluded that the pre-service English teachers' attitudes on computer assisted instruction do not change according to class level.

The results of ANOVA analysis have also revealed that participants from all grades have a high self-efficacy level on computer assisted instruction. Although, like attitudes, 4th grade pre-service English teachers' mean score obtained from self-efficacy scale ($\bar{x}$ =78.79; SD=11.03) in computer assisted instruction is higher than those of the other groups, this difference between groups is not statistically significant ($F_{(3-191)}$= 2.642, p=.051<0.05). This finding indicates that perceived self-efficacy of the participants on computer assisted instruction do not change according to class level.

Discussion / Conclusion and Suggestions

The common use of technology both in daily life and in instruction makes it essential for teachers to use it efficiently in the classroom. One of the most significant elements for efficient use of technology and computers is the undergraduate education where teacher candidates are trained for their professions. The attitude and the perceived self-efficacy of pre-service teachers have an effect on their performance in their profession. Attitude to technology and perceived computer self-efficacy are significant predictors of teacher candidates' attitude towards using computer-supported education (Çelik & Yeşilyurt, 2013). Thus, in this study it was aimed to determine the relationship between attitude and perceived self-efficacy of the pre-service English teachers on computer-assisted instruction. Moreover, the participants' attitudes and self-efficacy levels on the computer-assisted instruction according to their gender and class level were also examined. In this part of the research, the results are discussed and compared with other research results on the subject.

The first concern of the study was to examine the relationship between attitude and perceived self-efficacy of the pre-service English teachers on computer assisted instruction. The results showed that there was a significant positive, medium level correlation between attitude and perceived self-efficacy of pre-service English teachers. The present study's findings regarding the relationship between attitude and self-efficacy on computer assisted instruction serve to corroborate the findings of some studies which claim the existence of a positive relationship between these variables (Arslan, 2008; Busch, 1995; Çelik & Bindak, 2005; Doyle, Stamouli & Huggard, 2005; Kaur & Kaur, 2015; Pamuk & Peker, 2009; Torkzadeh & Van Dyke, 2002). Arslan (2008) and Busch (1995), for example, found a positive, medium level correlation between the computer attitudes and self-efficacy levels of undergraduate students. This finding of the study means that as the students' attitudes toward computer-assisted instruction become positive, they perceive themselves more competent in it. Results published by Torkzadeh and Van Dyke (2002) have indicated that students with "high" attitude toward computers have higher self-efficacy scores than students with "low" attitude toward computers. This finding of the current study also supports Bandura (1977) who states that positive emotional arousal has a positive effect on self-efficacy. Hence, the learning environment and the activities should be designed in a way to form positive attitudes and to increase the self-efficacy levels of pre-service English teachers if English teachers who are efficient computer users are desired. It would be very helpful for teacher candidates to see a model how to create a fruitiness and productive environment in classroom by the help of computers to have positive attitudes towards computer assisted instruction. Experience has an effect on developing self-efficacy (Bandura, 1977). Thus, opportunities should be given to the students to use and manage computers in schools to have an experience on them. As individuals with high computer self-efficacy are more successful at using computers (Langford & Reeves, 1998), during

undergraduate education, pre-service teachers should be trained on computers in such a way that they should believe in themselves and in their abilities to use computers in instruction.

The second concern of the study was to determine the attitude scores and self-efficacy levels of pre-service English teachers on computer-assisted instruction. The findings of the study indicated that the attitudes of pre-service English teachers on computer-assisted instruction were positive and their self-efficacy levels were also high. Within the line of this finding it can be stated that the pre-service English teachers find it necessary and useful to use computers in instruction and they believe in their abilities to use computers efficiently in the classrooms. A possible explanation for this can be that as the access to the computers become easier today, almost every student has a chance to use computers both in daily life and in education. A large body of research has investigated the effect of computer experience on attitudes towards computers (Badagliacco, 1990; Cazan, Cocoradă & Maican, 2016; Çelik & Yeşilyurt, 2013; Shashaani, 1994). Generally studies conducted on the subject assert that exposure to computers is related to attitudes in a positive way. The casual model, which was introduced in a study by Levine and Donitsa-Schmidt (1998), supports this idea by suggesting that computer use has a positive effect on perceived computer self-confidence, as well as on computer-related attitudes. Besides, there are some other studies which support this idea by stating that the use of computers increases the positive attitude (Sitzmann, 2011; Kutluca & Ekici, 2010) and the self-efficacy levels of the students on computers. This idea was also framed by Bandura (1977), who stated that self-efficacy is developed from external experiences and knowledge from one's own experiences. By the light of these ideas noted in literature, it can be inferred for the current study that as the pre-service teachers use computers and have more experience on them, they feel more competent and thereby have higher level of self-efficacy. Conversely, it is also signified that pre-service teachers with high self-efficacy level on computer perform better in technology use in classrooms (Chang, et. al, 2014; Langford & Reeves, 1998). Therefore, the programs at teacher training institutions should be designed in a way to increase the positive attitudes and self-efficacy levels of teacher candidates to enable them to be efficient users of computers in their classrooms. To achieve this, as stated before, opportunities should be given to pre-service teachers to experience computers during their training, and educational computer programs should be introduced into pre-service teachers' curricula. In this introduced programs, practical part should be emphasized more than theoretical part to give a chance to each student having experience with computers.

The third concern of the study was to examine the pre-service English teachers' attitude and perceived self-efficacy on computer assisted instruction according to gender. In some studies it is hypothesized that computers are more appropriate to men than to women (Cooper, 2006; Levin & Gordon, 1989; Whitley, 1997; Young, 2000). Therefore, this hypothesis was tested within the context of this study. The findings of the study revealed that the gender did not make any significant difference in participants' attitude and perceived self-efficacy on computer assisted instruction. Although the means of the male participants were higher than the females in both scales, it did not mean that male teacher candidates had more positive attitudes and higher self-efficacy levels on computer assisted instruction than the females. This result of the study shows parallelism with the some other studies carried out by Aşkar, Yavuz and Köksal (1992), Cazan, Cocoradă and Maican (2016), Kavanoz, Yüksel and Özcan, (2015) and Shih-hsien, (2012). These studies verify the outcomes obtained from this research by stating that there is no difference between males and females in their computer attitude and perceived self-efficacy. On the other hand, some others indicate that there are significant differences between females and males in terms of attitudes and computer use self-efficacy (Cassidy & Eachus, 2002; Chang, et. al., 2014; Huffman, Whetten & Huffman, 2013; Kadijevich, 2000; Kutluca & Ekici, 2010; Padilla-MeléNdez, Del Aguila-Obra & Garrido-Moreno, 2013; Wong, Teo & Russo, 2012; Yüksel & Çeliker, 2014). Kadijevich (2000) noted that males showed a more positive attitude towards computers than females. Beside, Kutluca and Ekici (2010) stated that females had more positive attitudes while there was no difference in their self-efficacy levels. On the other hand, Yüksel and Çeliker (2014) stated that relative to female students, male

students showed significantly higher level of computer use self-efficacy. However, in this current study, no significant difference was concurred between males and females. The reasons of these differences in various studies on the subject can be investigated for a better understanding.

The last concern of the study was to examine pre-service English teachers' attitude and perceived self-efficacy on computer assisted instruction according to class level. The findings of the study manifested that class level did not make a significant difference in participants' attitude and self-efficacy on computer assisted instruction. This is probably the most interesting finding of the study when compared with the related literature. According to Bandura (1977), the level of one's experience or knowledge on computers is positively related with computer self-efficacy. Similarly Shashaani (1994) notes that experience or exposure to computers is positively linked to computer attitudes. Moreover, in a different pattern, Pope-Davis and Vispoel (1993) indicate that training on computers or exposure to them has a stronger effect on computer self-efficacy than computer attitudes. Besides, the students who have various years of experience in using a computer have a more positive view on computer use (Liaw & Huang, 2006). Cassidy and Eachus (2002) have also indicated in their study that as the computer experience and computer training increase, the self-efficacy level of higher education students increase as well. As the pre-service teachers at the fourth grade have likely more experience and training on computers in instruction when compared with the first graders, it can be expected that the self-efficacy levels and attitudes of these students should be higher. Although this expectation was met when taking the means of the groups into consideration, it was not met statistically. That is, although the means of the fourth grade pre-service English teachers are higher than the first graders, this difference between the grades does not mean that the fourth graders have more positive attitudes and higher level of self-efficacy on computer assisted instruction than the first graders. This situation can be explained by the common use of computers at each level today. Nowadays, there is almost no individual who do not own a personal computer. According to the findings of Levine and Donitsa-Schmidt (1998), the effect of computer ownership on computer attitudes is somewhat greater than the effect of computer use at school. At this point, it is educationally significant to examine the effect of class level on attitude and self-efficacy regarding computer assisted instruction by controlling the effect of personal computer experiences and exposure to computers out of school to better analyze the effect of computer usage in educational applications on the attitudes and self-efficacy levels. Although the findings of this current study indicate no meaningful difference on participant's attitudes and self-efficacy levels on computer assisted instruction according to class level variable, it is not in good accordance with the study of Jennings and Onwuegbuzie (2001), which states that oldest students have the highest level of computer liking and perceived usefulness of computers. As the related literature indicates a significant difference in students' age or class level, this finding of the study can be tested or compared with different samples of English teacher candidates.

Briefly stated, this study has specified that there is a significant, positive, medium level correlation between attitude and perceived self-efficacy of English pre-service teachers on computer assisted instruction. This finding indicates that in teacher education programs, technology should be integrated into curriculum so that teacher candidates develop positive attitudes and thereby high self-efficacy levels towards computer-assisted instruction. Teacher candidates' attitude and self-efficacy on computers or technology gain much more importance when it is considered that they have to use technology in instruction in their professions. Especially, as English is not used in Turkey and so mostly perceived as unnecessary by many students, English pre-service teachers seem to make use of computers and technology to motivate students and to address the diversity and the interest of them. Another considerable finding of this study is that pre-service English teachers have high self-efficacy level and positive attitudes towards computer-assisted instruction. This means that they psychologically feel adequate and positive to use computers in instruction when they graduate. It shows that they have the potential to contribute to their fields by enriching the learning-teaching activities with

the use of computers and technology in instruction to meet the expectations and needs of the generation. When the failure in implementing computer-assisted instruction in schools has been considered, this study shows that the underlying reason for this failure is not mostly on teacher candidates who are the teachers of the near future. In this case, other factors which affect the success of computer-assisted instruction such as weak technical infrastructure, physical structure, in-service training activities, problems with software and hardware etc. should be investigated and dealt with to make the situation better.

Although this study presents valuable findings and adds to a growing body of literature on the subject, it has several limitations. One of them is that this study was conducted quantitatively and only limited to 195 participants in Eskişehir city. A meta-analysis study on the correlation between teachers or pre-service teachers' attitude and self-efficacy levels on computer-assisted instruction can be conducted for a better understanding of the correlation between attitude and self-efficacy with a wide range of participants. Moreover, a study with teachers, not with pre-service teachers, can be conducted to analyze the effect of attitude and perceived self-efficacy on computer-assisted instruction on their success in applying computer-assisted instruction in their classrooms. To understand the possible reasons for ineffective use of computers in instruction, a research with teachers in service is required as pre-service teachers already have positive attitudes and high self-efficacy levels on computer-assisted instruction. On the other hand, pre-service teachers' or teachers' high self-efficacy levels and positive attitudes for computer-assisted instruction do not mean that they are good implementers of the technology. Therefore, teachers' technology implementation process should be observed to find out the difficulties and the problems in computer-assisted instruction. Accordingly, the questions of what the reasons are for ineffective use of computers in instruction and how computers are best used to contribute to improved learning of English should be raised. It can be concluded that further research is needed to identify the conditions for successful implementation and the uses that support English language teaching.

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Uzun Öz

Giriş

Teknolojinin günlük hayatta ve öğretimde sıklıkla kullanılmaya başlanması öğretmenlerin teknolojiyi sınıfta etkili bir şekilde kullanmasını zorunlu kılmıştır. Bilgisayarların öğretimde kullanımının öğrenci başarısını arttırma, öğrenme-öğretme aktivitelerini zenginleştirme gibi pek çok faydası vardır (Banister, 2010; Brooks-Young, 2002). Pek çok ülke gibi Tükiye'de bilgisayarların öğretimde kullanılmasının faydalarını göz önünde bulundurarak teknolojinin eğitime entegrasyonu ile ilgili birtakım adımlar atmıştır. Fırsatları Arttırma ve Teknolojiyi İyileştirme Hareketi (FATİH) Projesi hükümet tarafından 2010 yılında atılan bu adımlardan biridir. Bu proje hükümet tarafından uygulanan bir eğitim reformunun parçasıdır. Eğitim reformuyla birlikte 12 yıllık (4+4+4) zorunlu eğitim gündeme gelmiş ve FATİH projesi ile birlikte bu eğitim reformu yabancı dil, özellikle de İngilizce, öğrenimi ve öğretimini gözden geçirme ve düzenleme fırsatı sunmuştur. 12 yıllık zorunlu eğitim (4+4+4) yabancı dil eğitimini ilkokul ikinci sınıfa indirerek daha erken bir yaşta dil öğretimi sağlarken, FATİH projesi dil eğitiminde öğrencilerin farklı yeteneklerine hitap ederek esneklik sağlamış ve iletişim için fırsatlar yaratmıştır (MEB, 2011). FATIH projesi kapsamında Türkiye'deki tüm devlet okullarına teknoloji sağlanmıştır. Fakat son yıllarda yapılan araştırmalar sağlanan bu teknolojinin sınıflarda etkili bir şekilde kullanılamadığını belirtmiştir (Güven, 2012; Kayaduman, Sırakaya ve Seferoğlu, 2011; Kurt, Kuzu, Dursun, Güllüpınar ve Gültekin, 2013). Teknoloji kullanımındaki başarısızlığın sebebleri olarak teknik problemler, yetersiz eğitim, ağır iş yükü, öğretmenlere verilen desteğin yetersizliği ileri sürülmüştür (Güven, 2012; Kurt, 2014). Teknoloji entegrasyonunun başarısı büyük ölçüde, uygulayıcılar olan öğretmenlere ve onların tutumları ile kendilerine olan inançlarına bağlıdır (Demiraslan Çevik, Dağhan, Barin ve Savran, 2015; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur ve Sendurur, 2012; Wong, Teo ve Russo, 2012; Şad ve Nalçacı, 2015). Teknolojiye karşı tutum ve öz-yeterlik algısı öğretmen adaylarının bilgisayar destekli eğitime ilişkin tutumlarında önemli yordayıcılardır (Çelik ve Yeşilyurt, 2013). Bu bağlamda öğretmenlerin ve geleceğin uygulayıcıları olacak olan öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları uygulanacak eğitim reformalarının başarılı olabilmesi açısından önem kazanmaktadır. Öğretimde bilgisayarların etkili kullanımı için önemli olan unsurların biri de öğretmen eğitimidir (Marra, 2004). Eğitsel teknolojiyi etkili ve yetkin kullanan öğretmenler yetiştirmek için öğretmen yetiştiren kurumlarda temel atılmalıdır (Wong, Teo ve Russo, 2012). Bu kapsamda bu çalışmanın temel amacı İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları arasındaki ilişkiyi belirlemektir. Bu temel amacın yanı sıra araştırma kapsamında, İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları belirlenerek cinsiyet ve sınıf düzeyi değişkenleri açısından incelenmiştir.

Yöntem

İlişkisel desende tasarlanan bu çalışmanın katılımcılarını kolaylı örneklem yöntemi ile belirlenen 195 öğretmen adayı oluşturmaktadır. 2014-2015 eğitim-öğretim yılında, Eskişehir ilinde bulunun Anadolu Üniversitesi ile Eskişehir Osmangazi Üniversitesinin eğitim fakültelerinde İngilizce öğretmenliği bölümünde öğrenim gören 195 öğretmen adayı ile mevcut araştırma gerçekleştirilmiştir. İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarına ve öz-yeterlik algılarına ilişkin verileri toplamak amacıyla Arslan (2006) tarafından geliştirilen "Bilgisayar Destekli Eğitim Yapmaya İlişkin Tutum Ölçeği" ve "Bilgisayar Destekli Eğitim İle İlgili Öz-yeterlik Algısı Ölçeği" kullanılmıştır. Bilgisayar Destekli Eğitim Yapmaya İlişkin Tutum Ölçeği, yarısı olumlu, yarısı olumsuz olmak üzere toplam yirmi sorudan oluşmaktadır. Arslan tarafından 0.93 olarak bulunan Cronbach alfa güvenirlik katsayısı, bu araştırma kapsamında 0.92 olarak hesaplanmıştır. Bilgisayar Destekli Eğitim İle İlgili Öz-yeterlik Algısı Ölçeği ise on biri olumlu, dokuzu olumsuz olmak üzere toplam yirmi sorudan oluşmaktadır. Arslan tarafından 0.94 olarak hesaplanan Cronbach alfa güvenirlik katsayısı bu

araştırma kapsamında 0.92 olarak hesaplanmıştır. Tutum ve öz-yeterlik ölçeği kullanılarak 195 öğretmen adayından elde edilen verilerin analizinde, veriler normal bir dağılım gösterdiği için parametrik testlerden faydalanılmıştır. Öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ile öz-yeterlik düzeyleri arasındaki ilişkinin incelenmesinde Pearson Momentler çarpım korelasyonu kullanılmıştır. Genel olarak İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarını ve öz-yeterlik algılarını belirlemek amacıyla betimsel istatistiklerden (ortama, frekans, yüzde, standart sapma) faydalanılırken; tutumların ve öz-yeterlik algılarının cinsiyet ile sınıf düzeyi değişkenlerine göre değişip değişmediklerini tespit etmek amacıyla t-testi ve ANOVA testi kullanılmıştır.

Bulgular

Bu araştırma sonucunda İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ile öz-yeterlik algıları arasında istatistiksel olarak anlamlı, orta düzeyde ve pozitif yönde bir ilişki tespit edilmiştir ($r=.628$; $p<0.01$). Araştırmanın ikinci alt problemine ilişkin yapılan analizler öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarının olumlu; öz-yeterlik algılarının ise yüksek olduğunu göstermiştir. Öğretmen adaylarının bilgisayar destekli eğitim yapmaya ilişkin tutum ölçeğinden aldıkları puan ortalaması 76,58 olarak tespit edilirken, bilgisayar destekli eğitim ile ilgili öz-yeterlik algısı ölçeğinden aldıkları puanların ortalaması 74,95 olarak hesaplanmıştır. Cinsiyetin, öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarında ve öz-yeterlik algılarında anlamlı bir farklılık oluşturup oluşturmadığını tespit etmeye yönelik yapılan analizler, İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarının ve öz-yeterlik algılarının cinsiyet değişkenine göre farklılık göstermediğini ortaya çıkarmıştır. Hem tutum hem de öz-yeterlik ölçeklerine ilişkin puanlarda erkek öğrencilerin ortalamalarının kadınlardan daha yüksek olduğu görülmüştür. Fakat ortalamalar arasındaki bu farklılık hem tutum ($t=-1.838$, $p=.086>0.05$) hem de öz-yeterlik algıları ($t=-1.998$, $p=.494>0.05$) açısından istatistiksel olarak anlamlı bulunmamıştır. Sınıf düzeyinin, öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarında ve öz-yeterlik algılarında anlamlı bir farklılık oluşturup oluşturmadığını tespit etmeye yönelik yapılan analizler, İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarının ve öz-yeterlik algılarının sınıf düzeyi değişkenine göre farklılık göstermediğini ortaya çıkarmıştır. Bilgisayar destekli öğretime ilişkin tutum ölçeğinde dördüncü sınıf öğretmen adaylarının ortalaması ($X=80.97$; $SD=10.94$) diğer gruplardan daha tüksek bulunmuştur. Fakat gruplar arasındaki bu fafrk istatistiksel olarak anlamlı değildir ($F_{(3-191)}= 2.280$, $p=.081>0.05$). Öğretmen adaylarının bilgisayar destekli öğretime ilişkin öz-yeterlik algılarına ait ortalamalar incelendiğinde de yine benzer şekilde dördüncü sınıf öğretmen adaylarının ortalamalarının diğer sınıf düzeylerindeki öğretmen adaylarından daha yüksek olduğu göze çarpmaktadır ($X=78.79$; $SD=11.03$). Fakat bu farklılık da istatistiksel olarak anlamlı bulunmamıştır ($F_{(3-191)}= 2.642$, $p=.051<0.05$).

Tartışma ve Sonuç

Araştırma sonucunda İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ile öz-yeterlik algıları arasında istatistiksel olarak anlamlı, orta düzeyde ve pozitif yönde bir ilişki tespit edilmiştir. Bu sonuç, öğretmen adaylarının bilgisayar destekli öğretime ilişkin olumlu tutumlara sahip olmalarının, bu konuda kendilerini daha yeterli hissetmelerine yardımcı olabileceğini göstermektedir. Bu nedenle üniversitelerdeki öğrenme ortamları ve etkinlikler öğrencilerin bilgisayar destekli öğretime ilişkin olumlu tutumlara sahip olabilecekleri bir şekilde düzenlenmelidir. Öğrencilere bilgisayar destekli öğretimle nasıl eğlenceli ve faydalı ortamlar yaratılabileceği gösterilmeli ve bilgisayar destekli öğretimi deneyimlemeleri sağlanmalıdır. Öğretmen adaylarının bilgisayar destekli öğretime ilişkin olumlu tutumlara ve yüksek öz-yeterlik algılarına sahip oldukları ortaya çıkmıştır. Bu bulgu öğretmen adaylarının bilgisayarlardan öğretimde faydalanmayı faydalı bulduklarının ve ve bilgisayarları sınıfta kullanma konusunda kendi yeteneklerine güvendiklerinin bir göstergesidir. Bu durum, Bandura'nın (1977) öz-yeterliğin dışsal ve kişinin kendi deneyimlerinden sahip olduğu bilgilerle

geliştiğine dair açıklaması ile kısmen açıklanabilir. Günümüzde hızlı teknolojik gelişmelere bağlı olarak bilgisayar hayatın her anında kullanılmaktadır. Bu durum kişilerin sınıfta ve öğretimde bilgisayar kullnımına dair adaptasyonunu da kolaylaştırmaktadır. Daha önce de bahsedildiği gibi öğretmenlerin mesleğe atılmadan, yetiştirildikleri kurumlarda bilgisayar destekli öğretime ilişkin deneyimlerinin arttırılması, daha sonradan mesleğe atıldıklarında işlerini kolaylaştıracaktır. Bu bağlamda öğetmen yetiştiren kurumlarda birinci sınıftan itibaren bilgisayar destekli öğretime ilişkin ağırlıklı olarak uygulamalı etkinliklere yer verilmesi faydalı olacaktır. Araştırma sonuçları İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumlarının ve öz-yeterlik algılarının cinsiyet ve sınıf düzeyi değişkenlerine göre farklılık göstermediğini ortaya çıkarmıştır. Literatürde deneyim ile öz-yeterlik arasında olumlu bir ilişki olduğu belirtilmiştir (Bandura, 1977, Liaw ve Huang, 2006; Pope-Davis and Vispoel, 1993; Shashaani, 1994). Dördüncü sınıftaki öğretmen adaylarının birinci sınıftakilerle karşılaştırıldığında, eğitim yılı açısından bilgisayar destekli öğretime ilişkin daha fazla bir öğretime maruz kalabilecekleri düşünüldüğünde bu bulgu şaşırtıcı olabilir. Araştırmanın bu bulgusu teknoloji ve bilgisayarlara erişimin günümüzde çok kolay olması ve bilgisayarların artık öğretim dışında günlük hayatta da yaygın kullanımı ile açıklanabilir. Levine ve Donitsa-Schmidt (1998) bilgisayara sahip olma etkisinin bilgisayarın okulda kullanımındaki etkisinden daha büyük olduğunu belirtmişlerdir. Günümüzde öğretmenler bilgisayarı öğretimde kullanmak durumundadırlar. Bu bağlamda öğretmen adaylarının bilgisayar destekli öğretime ilişkin tutumları ve öz-yeterlik algıları önem kazanmaktadır. Özellikle İngilizce, Türkiye'de kullanılmadığı ve bu nedenle de öğrenciler tarafından çoğu zaman gereksiz olarak algılandığı için, İngilizce öğretmen adaylarının öğrencileri motive etmek ve öğrenci ilgi ve farklılıklarına hitap etmek için bilgisayarlardan faydalanması kaçınılmaz görünmektedir. Bu araştırmada İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin olumlu tutumlara ve yüksek öz-yeterlik düzeylerine sahip oldukları görülmüştür. Bu durum İngilizce öğretmen adaylarının bilgisayar destekli öğretime ilişkin alanlarına katkı sağlamaya hazır olduklarının bir göstergesidir. Fakat okullarda bilgisayar destekli öğretime ilişkin yaşanan sıkıntılar göz önüne alındığında, hizmetteki öğretmenlerin yeterlikleri, teknik altyapı, fiziksel imkanlar, hizmet-içi eğitim etkinlikleri, yazılım ve donanım ile ilgili problemler vb. diğer faktörlerin de incelenmesi gerekmektedir.

Appendix-A

a. Bilgisayar Destekli Eğitim Yapmaya İlişkin Tutum Ölçeği **(***The Attitude Scale Toward Making Computer Supported Education).*

b. Bilgisayar Destekli Eğitim Yapmaya İlişkin Öz-yeterlik Algısı Ölçeği *(Self-efficacy Scale in relation to Computer Based Education).*

a. Bilgisayar Destekli Eğitim (BDE) Yapmaya İlişkin Tutum Ölçeği

1	Bilgisayar eğitimde etkili kullanılamaz*
2	Bilgisayarı derste isteyerek ve severek kullanırım
3	Mecbur kalmadıkça bilgisayarı dersi desteklemek amacıyla kullanmam*
4	BDE benim için önemli bir konudur
5	BDE ile yapılan derslerde öğrenciler yaratıcılıklarını geliştiremez*
6	Bilgisayarı derslerimde daha etkili kullanmanın yollarını araştırırım
7	Bilgisayarla eğitimi bir türlü bağdaştıramıyorum*
8	Bilgisayarın kullanıldığı derslerde öğrenciler daha iyi öğrenir
9	BDE yapmak yerine konuyu kendim anlatırım*
10	Öğretmenler bilgisayar kullanmaya teşvik edilmelidir
11	BDE ile ders yapmak zaman kaybıdır*
12	Bilgisayar öğrencilerin dikkatini çekmede etkili araçtır
13	BDE ile öğrenciler diğer yöntem ve tekniklere göre daha az öğrenir*
14	Bilgisayar yardımıyla yapılan dersler eğlenceli geçer
15	Bilgisayar desteği ile yapılan eğitimin katkısı harcanan emeği karşılamaz*
16	Her sınıfta bilgisayar aktif bir şekilde kullanılmalıdır
17	Dersleri yaparken bilgisayarı öğretim amaçlı kullanmayı düşünmem*
18	Bilgisayarın etkili bir öğretim aracı olduğunu düşünüyorum
19	Bilgisayarın başından biran önce kalkmak isterim*
20	Derslerimde bilgisayar kullanmaya çalışırım

b. Bilgisayar Destekli Eğitime İlişkin Öz-Yeterlik Algısı Ölçeği

1	Bilgisayar öğrenme konusunda kendime oldukça güveniyorum
2	Bilgisayar öğrenme konusunda kendimi güdüleyebiliyorum
3	Yanımda bilgisayar hakkında konuşulurken kendimi yetersiz hissediyorum*
4	Bilgisayarı etkili ve verimli bir şekilde kullandığımı düşünüyorum
5	Bilgisayar kullanma konusunda pratik olduğum söylenemez*
6	Bilgisayar dilini çabuk anladığımı düşünüyorum
7	İnternette arama yapma konusunda tam bir bilgiye sahip değilim*
8	Bilgisayar yoluyla kendimi sürekli olarak geliştirebileceğimi düşünüyorum
9	Bir başkasına öğretebilecek kadar bilgisayar bilgisine sahip değilim*
10	Teorik bilgilerimi bilgisayarda uygulamaya geçiremem*
11	Bilgisayar yardımıyla konuları daha hızlı ve sistematik bir şekilde öğretebilirim
12	Bilgisayarı sınıf ortamında çeşitli şekillerde kullanabilirim
13	Öğrenciler için bilgisayarda yapabilecekleri etkinlikler hazırlama konusunda iyi değilim*
14	Bilgisayar yardımıyla dersi eğlenceli hale getirebilirim
15	Bilgisayarla eğitim ortamına çeşitlilik katmakta zorluk çekerim*
16	Bilgisayar yardımıyla öğrencilerin eğitim ortamına aktif katılımını sağlayabilirim
17	Bilgisayar yardımıyla öğrencilerin yaratıcılıklarını çok rahat şekilde geliştirebilirim
18	Bilgisayar yardımıyla öğrencilerin üst düzey düşünme becerilerini geliştirebileceğimi zannetmiyorum*
19	Bilgisayarda etkili sunular hazırlayabilirim
20	Bilgisayarla öğretim yaparken öğrencilerin gelişim özelliklerini göz önünde bulunduramayabilirim*

***** Items that should be reversed for scoring purposes.

P.S. As the scales were applied in Turkish language to the participants, the items in these scales were not given as translated into English.