MEASURING PRE-SERVICE ENGLISH TEACHERS' ATTITUDES TOWARDS INSTRUCTIONAL TECHNOLOGY USE

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Abstract

The aim of this study was to examine the attitudes of pre-service English teachers towards the use of instructional technologies in relation to grade level and gender. A sample of 213 pre-service teachers was assessed for their attitudes towards instructional technologies. The participants of the study are pre-service English teachers enrolled at English Language Teaching departments at Hacettepe and Gazi Universities. In order to collect data, the instructional attitudes survey, developed by Metin, Yılmaz, Coşkun & Birişçi (2012), was used. This scale surveys instructional technology attitudes in terms of pre-service teachers' beliefs about instructional technology use in lesson (BITU), appreciation of instructional technology use in lessons (AITU), unappreciated instructional technology use (UITU), attitudes towards disinclination to make use of instructional technology, and beliefs about usefulness of instructional technology (BUIT). The results of this study indicated that pre-service English teachers have strong positive attitudes towards technology use in lessons. Male pre-service teachers were found to have more positive attitudes towards technology use in lessons. Finally, statistical differences were found between fourth grade and first grade students in terms of their attitudes towards technology use. It was hypothesized that pre-service English teachers form positive attitudes towards instructional technology use throughout their university education.

Keywords: *Instructional Technology, Pre-service English Teachers.*

İngilizce Öğretmen Adaylarının Eğitimsel Teknoloji Kullanımına Karşı Tutumlarının Ölçülmesi

Öz

Bu çalışmanın amacı İngilizce öğretmen adaylarının eğitim teknolojilerine karşı tutumlarını cinsiyet ve sınıf açısından incelemektir. 213 öğretmen adayından oluşan katılımcı grubu, eğitim teknolojilerine karşı olan tutumları açısından değerlendirilmiştir. Çalışmanın katılımcıları Hacettepe ve Gazi Üniversitelerinin İngiliz Dili Eğitimi bölümlerinde eğitim gören İngilizce öğretmen adaylarıdır. Veri toplama aracı olarak Coşkun ve Birişçi'nin (2012) geliştirdiği eğitimsel teknolojileri tutum anketi kullanılmıştır. Bu anket öğretmenlerin tutumlarını öğretmen adaylarının eğitim teknolojilerini kullanmaya karşı tutumları, derslerde eğitim teknolojilerini kullanımını destekleme, desteklenmeyen teknoloji kullanımı, teknoloji kullanmamaya karşı tutumlar ve eğitim teknolojilerinin faydaları açısından incelemektedir. Bu çalışmanın sonuçları, İngilizce öğretmen adaylarının teknoloji kullanımına karşı olumlu tutumları olduğunu göstermektedir. Erkek öğretmen adaylarının teknoloji kullanımına karşı daha olumlu tutumlarının oldukları görülmüştür. Sonuç olarak, dördüncü sınıf ve birinci sınıf öğrencileri arasında teknoloji kullanımına karşı istatistiksel farklar olduğu görülmüştür. Öğretmen adaylarının eğitimleri süresince teknolojiye karşı olumlu tutumlar geliştirdikleri öne sürülmüştür.

Anahtar Kelimeler: *Eğitimsel Teknoloji, İngilizce Öğretmen Adayları.*

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Introduction

Using technology in language education has become highly popular lately. Teachers are expected to create effective, efficient atmospheres with the help of technologies in their classrooms. These environments are important for teacher-student interaction and communication. For this, teachers should use technological materials addressed bothto eyes and ears in learning and teaching process. Moreover, educational technology examines the reasons of students' failures, makes analysis and develops the precautions which can increase the success level and deal with the problems of education in rational and scientific way (Koşar et al. 2003).

Instructional technologies both facilitate teachers' job and at the same time impose a responsibility on them. New technology has always changed the instructional program, learning-teaching process, the learning styles of the students so that teachers have to adapt to that change. Today, teachers are expected to know the basic process and concepts of instructional technologies; to plan designed environment supported by technology and apply; to use different assessment strategies supported by the technology; to follow the career development, technological changes and improve themselves; apply the social, ethnical, legal and humanistic principles related to the usage of instructional technology.

Literature Review

There are a number of studies on instructional technologies that have been carried out in Turkish context.Akbaba (2001) carried out a study to determine the attitudes of the primary level students towards technology and computers and found positive feelings toward technology and its applications. In another study, Yılmaz (2005) attempted to investigate the relation between instructional technology use and success. The results of this study indicated that technological materials have positive impacts on students' achievement and attitudes. In addition, the study conducted by Demirel (2005) revealed that using instructional technology in teaching-learning processes provides a more effective presentation and makes instruction more meaningful and enjoyable. Demirel (2005) also suggested that teachers should acquire the quality of technology literacy to offer students rich learning environments integrated with new technologies and they should learn how to integrate technology with learning environments. In another study, Pala (2006) determined that primary teachers' attitudes towards educational technologies are positive. Furthermore, no statistically significant difference in teachers' attitudes towards educational technologies in respect to the different variables such as gender, ages, schools they teach and periods of service were found. Pre-service teachers' attitudes toward the utilization of technological tools were also investigated by Yavuz and Coskun (2008). In their study, they reported that technology assisted project studies affected students' attitudes toward the utilization of technology in education positively.In another study, Özgen and Obay (2008) investigated the attitudes of prospective teachers of secondary mathematics towards educational technology in terms of a number of variables. The results showed that the attitudes of prospective teachers towards educational technology differed significantly across class levels.

Friedman et al, (2009) carried out a study that investigated beliefs, practices, and the efficacy of social studies faculty members from the United States in terms of instructional technology usage. Their study revealed that familiarity with the National Educational Technology Standards, as well as confidence with technology is an important determiner for the frequency and type of technology that social studies faculty members use in their courses. This finding accentuates the importance of self-confidence. The last but not the least, Can (2010) worked on the effects of the use of teaching materials like overhead projector and projector on learning. The results indicated that pre-service teachers believe that using technological devices like overhead projector bring variety to lessons, make lessons more vivid and livelier.

Significance of the Study

Currently, technology is improving at a rapid speed and the term "instructional technology" has become a widespread term recently. According to some researchers (Chapelle, 2010; Zhao & Lai, 2007), language instruction can benefit from technology integration both inside the class and outside the class. Similarly, Myers and Halpin (2002) reasonably put forward that teachers' attitudes towards instructional technologies are major predictors for future computer use in the classroom. However, there are studies that reveal that most teachers only use technology to design instructional materials (Hermans, Tondeur, van Braak, and Valcke, 2008) or deliver lectures, but do not effectively integrate technology into teaching and learning (Gorder, 2008). That is, the number of teachers utilizing technology as a learning tool is can be rather low at times. Another important reason for working on pre-service teachers' attitudes towards technology use is that some external barriers, such as a lack of equipment, training, and support, can be overcome if adequate funding and training is provided through governmental policies (Liu, 2011). However, internal barriers like attitudes beliefs are key variables that must be worked on (Palak and Walls, 2009; Park and Ertmer, 2007).

Therefore, there is a need for studies that focus on pre-service English teachers' attitudes towards technology use so that they can be encouraged to implement technology in their future teaching careers and strengths and weaknesses of English Language Teaching departments can be determined so as to provide betterment.

The aim of the Study

The purpose of the present study is to measure the attitudes of pre-service English teachers towards instructional technology use. The study measures attitudes towards instructional technologies in relation to *(a)beliefs about instructional technology use in lesson (BITU), (b) appreciation of instructional technology use in lessons (AITU), (c) unappreciated instructional technology use (UITU), (d) attitudes towards disinclination to make use of instructional technology,* and *(e)beliefs about usefulness of instructional technology (BUIT)*. The secondary aim of the study is to investigate the gender factor and grade level in relation to attitudes to instructional technology use. In short, the present study aims to answer the following questions:

Research questions:

1. What are the perceptions of ELL distance education students in terms of the following variables:
   (a) how often they use the Internet,
   (b) how long they study to improve their English level,
   (c) beliefs about instructional technology use in lesson (BITU),
   (d) appreciation of instructional technology use in lesson (AITU),
   (e) unappreciated instructional technology use (UITU),
   (f) disinclination to make use of instructional technology (DMIT), and
   (g) beliefs in the usefulness of instructional technology use (BUIT)
2. Do male and female pre-service English teachers differ in terms of their beliefs towards instructional technology use?
3. Do pre-service teachers from different grade levels differ in terms of their beliefs towards instructional technology use?

Methodology

Data Collection Tool

The "*Attitudes to Instructional Technology Use Scale*", developed by Metin, Yılmaz, Coşkun & Birişçi (2012) was used to collect data. There are 37 items in the scale, covering five factors among which the first one is *pre-service teachers' beliefs about instructional technology use in lesson (BITU)* and there are ten items under this factor. These items are intended to measure pre-service teachers' attitudes towards the use of instructional technologies in lessons. The second factor is *appreciation of instructional technology use in lesson (AITU)* with nine items. The third factor is *negative unappreciated instructional technology use (UITU)* with nine items, too. The fourth factor with 7 items is *disinclination to make use of instructional technology (DMIT)* in their lessons. Therefore, this factor is named as negative attitudes towards prospective technology use. The final factor, which consists of 2 items, is *beliefs in the usefulness of instructional technology use (BUIT)*. The reliability analysis of the scale indicates that internal reliability coefficients (Cronbach's Alpha) for all dimensions range from .493 to .907 (Table 1) and the total internal reliability coefficient is .647, which indicates a reasonable level of reliability.

Table 1. Reliability Analysis

Variable	α	Number of items
beliefs about instructional technology use in lesson (BITU)	.507	10
appreciation of instructional technology use in lesson (AITU)	.787	9
unappreciated instructional technology use (UITU)	.907	8
disinclination to make use of instructional technology (DMIT)	.493	7
Total	.647	34

Participants of the study

The total number of the participants is 213. The number of teacher candidates from Hacettepe University is 147 and from Gazi University is 66. The total number of first year teacher candidates is 51, second year teacher candidates is 58, third year teacher candidates is 54, and fourth year teacher candidates is 54. The total number of female teacher candidates is 166, and male teacher candidates is 47 (Table 2).

Table 2. Participants of the Study

University	1. year		2. year		3. year		4. year		Total
	female	male	female	male	female	male	female	male	
Gazi University	15	2	14	2	24	3	3	3	66
Hacettepe University	28	4	30	12	18	5	32	16	147
Total	51		58		50		54		213

Data Analysis

Research question 1: What are the perceptions of ELL distance education students in terms of the following variables:

(a)how often they use the Internet,

(b) how long they study to improve their English level,

(c) beliefs about instructional technology use in lesson (BITU),

(d) appreciation of instructional technology use in lesson (AITU),

(e) unappreciated instructional technology use (UITU),

(f) disinclination to make use of instructional technology (DMIT), and

(g) beliefs in the usefulness of instructional technology use (BUIT)

Table 3. Descriptive Statistics for the Variables

Variable	$\bar{X}$	*SD*	Min	Max	Range
How often do students use the Internet?	2.44	.90	1	5	4
How often do you study to improve you English level?	2.05	.78	1	4	3
Beliefs regarding the usage of instructional technology	33.07	4.27	18	45	27
Appreciation of instructional technology use	31.69	6.67	9	60	51
Unappreciated instructional technology use	15.40	6.45	8	40	32
Disinclination to make use of instructional technology	16.48	3.95	9	36	27
usefulness of instructional technology	8.50	2.29	3	34	31

A full picture of the attitudes of pre-service teachers was obtained from the descriptive tests. The results are presented in Table 3. The results show that the participants have a moderately high level of Internet use (M=2.44). The results also indicate that students do not spend much time for self-development in their language skills (M=2.05). The participants have a relatively high level of beliefs regarding the usage of instructional technology (M=33.07). The participants also have a relative level of appreciation for instructional technology use (M=31,69). The mean scores for unappreciated instructional technology use and attitudes toward disinclination to technology use are low (M=15.40, M=16.48, respectively). Therefore, it can be asserted that pre-service teachers highly favor the use of instructional technologies in their lessons.

Table 4. Distribution of Sub-Dimensions of Instructional Technology Attitudes

Variables	Low		Moderate		high	
	f	%	*f*	%	*f*	%
Beliefs regarding the use of instructional technology	0	0	95	44.60	118	**55.39**
Appreciation of instructional technology use	3	1.4	66	30.98	143	**67.13**
Unappreciated instructional technology use	105	**49.29**	95	44.60	13	6.10
Disinclination to technology use	13	6.10	184	**86.38**	16	7.50
Usefulness of instructional technology	1	0.46	29	13.61	183	**85.91**

In order to further analyze the level of instructional technology beliefs of pre-service English teachers, the results of 213 participants were grouped as *low*, *moderate*, and *high*. To do this, the maximum values were divided into three in order to find the cut-off points. The cut-off points for the variables are as follows: beliefs about the use of instructional technologies (low=1-16, moderate=17-33, high=33-50), appreciation of the use of instructional technology in lesson (ASIT) (low=1-15, moderate=16-30, high=31-45), negative attitudes towards technology use (low=1-13, moderate=14-27, high=27-30), Attitudes towards disinclination to make use of instructional technology (low=1-11, moderate=12-23, high=24-35), and finally usefulness of instructional technology use (low=1-3, moderate=3-7, high=7-10).

The results are presented in Table 4. According to the results, a moderate number of the participants have positive attitudes towards instructional technology use (55.39%), and a slightly higher number of the participants appreciated the use of instructional technologies (67.13%). A moderate number of the participants have negative attitudes to the use of instructional technology us (49,29%), and a huge number of the participants have negative attitudes to lack of technology use (86.38%). Finally, we can understand from the table that a big number of the participants believe the usefulness of instructional technologies (85.91%).

Table 5. Beliefs about Instructional Technology Use in Lesson (BUTI)

BRUIT	N	*Min.*	Max.	Mean	SD
1. Using instructional technologies increases clarity of lessons	213	1	5	3.9906	.83548
2. I enjoy using instructional technologies in lesson	213	1	5	3.9296	.95647
3. I learn the lesson better when instructional technologies are used	213	1	5	3.8779	.95371
4. I am bored when instructional technologies are used in lessons	213	1	5	2.1315	1.09096
5. I feel motivated in lessons where instructional technologies are used	213	1	5	3.6948	.95947
6. I am not interested to use instructional technologies in the lesson	213	1	5	2.0986	1.18745
7. I have difficulty in lessons in which instructional technologies are used	213	1	5	2.0986	1.15931
8. I am pleased with the lessons in which instructional technologies are used	213	1	5	3.8122	.94292
9. I learn topics swiftly when instructional technologies are used	213	1	5	3.6714	.93414
10. I can listen carefully to the lesson in which instructional technologies are used	213	1	5	3.7700	.88416

The first factor in the study is beliefs about the use of instructional technologies in classes. The results are presented in Table 5. As we can understand from the table, majority of the participants stated that instructional technologies increase the clarity of lessons (m=3.99), they enjoy using instructional technologies in lessons (m=3.92), they learn the lesson better with the use of instructional technologies (m=3.87), and they are pleased in lessons in which instructional technologies are used (m=3.81). In the same way, most of the participants stated that they learn topics swiftly and they can listen carefully to the lesson when instructional technologies are used (m=3.67, m=3.77, respectively). The participants also stated that instructional technology use in lessons increase their motivation (m=3.69). The other items were negatively worded and the means scores for them are low. A limited number of the participants stated that they are bored in lessons in which technology is used (m=2.13), that they have difficulty in lessons in which technology is used (2.09), and that they are not interested to use educational technologies (m=2.09). In short, it is possible to conclude that teacher candidates have a significantly high level of positive attitudes to the use of instructional technologies in lessons.

Table 6. Appreciation of Instructional Technology Use (AITU)

AITU	N	*Min.*	Max.	Mean	SD
1. I become active in the lessons in which used instructional technologies	213	1	5	3.5023	.97431
2. My creativity increases in lessons where instructional technologies are used.	213	1	5	3.5915	.99400
3. I make effort to learn new instructional technologies	213	1	5	3.5211	1.10136
4. The knowledge learnt during the lessons by using instructional technologies are more permanent	213	1	5	3.6995	.96341
5. I feel myself more comfortable in the lessons where instructional technologies are used.	213	1	5	3.7136	1.05404
6. I remember the knowledge easily in lessons where instructional technologies are used.	213	1	5	3.6526	.93741
7. Using instructional technologies in lessons increases learning	213	1	5	3.6338	1.11049
8. I am delighted in reading the books explaining the instructional technologies	213	1	5	2.9671	2.23477

Similar to the sub-dimension about beliefs, the second sub-dimension also focuses on the appreciation of instructional technology use. The results are presented in Table 6. The majority of the participants stated that they felt comfortable during the lessons in which are used (m=3.71), that instructional technologies contribute to the retention of the material learned (m=3.69), and that they easily remember the knowledge that is given through technology (3.65), and that using instructional technologies increases learning (m=3.63). Similarly, most of the participants stated that their creativity increases with the use of technology (m=3.59), they make an effort to learn how to use these technologies (m=3.52), and they become active in lessons in which instructional technologies are used (m=3.50). A moderate number of the participants stated that they took delight in reading books that focus on instructional technologies (m=2.96). To conclude, it is possible to deduce that pre-service English teachers have a high level of appreciation to the use of instructional technologies in their lessons and they emphasize that they add to the retention.

Table 7. Unappreciated Instructional Technology Use (UITU)

Negative attitudes toward instructional technology use	N	*Min.*	Max.	Mean	SD
1. I dislike talking about improving instructional technologies	213	1	5	2.1784	1.13108
2. I lose my concentration lessons where instructional technologies are used.	213	1	5	1.9859	1.03011
3. I do not want to learn new improvements in instructional technologies	213	1	5	1.8920	1.06955
4. It is a waste of time to use instructional technologies in lessons	213	1	5	1.7371	.98880
5. I am stressed in the lesson where I have to use instructional technologies.	213	1	5	2.0000	1.65973
6. Students' achievement are not affected from the use of instructional technologies in lessons	213	1	5	1.8122	1.00115
7. Using instructional technologies is unnecessary	213	1	5	1.7653	.99589
8. Teachers are passive when instructional technologies are used in lessons	213	1	5	2.2911	1.12004

The third factor within the focus of the study was to analyze negative attitudes to towards instructional technology use. The results are presented in Table 7. The items here are negatively worded or include negative thoughts and therefore the mean scores are low. We can understand that majority of that only a small number of the participants stated that they think technology use is a waste of time (m=1.73), they will avoid using instructional technologies (m=1.74), and using instructional technologies is unnecessary (m=1.76). The mean score of those who stated that they lose concentration in lessons in which instructional technologies are used is 1.98, the mean score of those who stated that they do not want to learn about new technologies is 1.89, and the mean score of those who think that student achievement is not influenced by the use of instructional technologies is 1.81. A slightly bigger number of the participants stated that they dislike talking about instructional technologies (m=2.17) and teachers are passive when instructional technologies are used (m=2.29). We can understand from the results that pre-service English teachers do not have negative attitudes towards the use of instructional technologies.

Table 8. Disinclination to Make Use of Instructional Technology (DMIT)

DMIT	N	*Min.*	Max.	Mean	SD
1. I will avoid using the instructional technologies in my classes	213	1	5	1.7418	.92858
2. I do not know how to use computers in my lessons	213	1	5	1.6385	1.01211
3. I do not want to use computers and the internet in my classes.	213	1	5	1.6056	1.02071
4. I do not want to participate in lessons taught with instructional technologies	213	1	5	1.6244	.96630

The fourth step in the analysis boiled down to the attitudes towards disinclination to the use of instructional technologies. The results are presented in Table 8. The table indicates that a very small number of the participants stated that they do not want to use instructional technologies in their lessons (m=1.60), that they do not want to participate lessons which are taught with instructional technologies (m=1.62), and that they do not know how to use computers in their lessons (m=1.63). Finally, the mean score for those who believe that they are not going to make use of instructional technologies is 1.74. This indicates that the number of pre-service teachers who will not implement instructional technologies is rather small.

Table 9. Beliefs about Usefulness of Instructional Technology

BUIT	N	*Min.*	Max.	Mean	SD
1. It is beneficial for me to learn how to use instructional technologies	213	1	5	4.2582	.82644
2. Using instructional technologies is becoming more prevalent in education	213	1	5	4.2441	2.03194

Finally, the last part is related to the beliefs about the usefulness of instructional technologies. The results are presented in Table 9. The table clearly shows that a big majority of the pre-service teachers within the scope of the study believe that it is beneficial for them to use learn how to use instructional technologies (m=4.25), and believe that using instructional technologies is becoming more prevalent (m=4.24). It is clear that pre-service teachers believe in the usefulness of instructional technologies.

Table 10. T-test Results for Gender

Variables	Group statistics			t-test	
	gender	47	Mean	t.	p
BITU	female	166	32.7530	-2.083	**.038**
	male	47	34.2128		
AITU	female	166	31.3253	-1.543	.124
	male	47	33.0213		
UITU	female	166	14.9880	-1.777	.110
	male	47	16.8723		
DMIT	female	166	16.2530	-1.605	.921
	male	47	17.2979		
BUIT	female	166	8.4940	-.100	.921
	male	47	8.5319		

A t-test was run in order to see whether there are differences between male and female teacher candidates in terms of the sub-dimensions of instructional technology use. The results are presented in Table 10.We can understand from the table that there is a statistically significant difference between male and female teacher candidates in terms of beliefs about technology use (p= .38 > .05). From the mean scores, we can understand that the mean score of female students is lower than that of male students (female m= 32.7530, male m= 34.2128). There are no statistically significant differences in terms of *appreciation of instructional technology use* (p= .124 > .05), *disinclination to use technology* (p= .110 > .05), attitudes to lack of technology use (p= .921 > .05), and usefulness (p= .921 > .05).

Table 11. ANOVA Results for Grade Levels

Variables	status	N	M	F	Sig.
bitu	1. year	49	31.4694		**.014**
	2. year	60	33.0167		
	3. year	50	33.8000		
	4. year	54	33.9259		
aitu	1. year	49	30.1429		.072
	2. year	60	31.5333		
	3. year	50	31.4200		
	4. year	54	33.5556		
uitu	1. year	49	16.2653		.167
	2. year	60	14.9667		
	3. year	50	16.5400		
	4. year	54	14.0556		
dmit	1. year	49	15.9796		.678
	2. year	60	16.3500		
	3. year	50	16.8400		
	4. year	54	16.7593		
usefulness	1. year	49	7.8980		.136
	2. year	60	8.8500		
	3. year	50	8.4000		
	4. year	54	8.7593		

In order to see whether there are any significant differences among different grade levels, a one-way analysis of variance test (ANOVA) was administered. The results are given in Table 11. The table clearly shows that there is a statistically significant difference among grade levels in terms of beliefs about technology use (p= .014 <.05). From the mean scores, we can see that the mean scores for the first grade students is rather lower than the other three grade levels. (1st year = 31.46, 2nd year= 33.01, 3rd year = 33.80, and 4th year = 33.92). There are no statistical differences in terms of appreciation of instructional technology use (p= .072 > .05), disinclination to use technology (p= .162 > .05), attitudes to lack of technology use (p= .678 >.05), and usefulness (p= .136 > .05). It is also possible to see from Table 11 that the mean scores for first year students are rather low compared to others. As for the items that measure negative attitudes, the mean scores for the first year students is higher than the other levels. Depending on these results, it is possible to speculate that instruction contributes to pre-service teachers' developing positive attitudes towards technology use.

Conclusion

As a result of the increases in instructional technology, the attitudes of pre-service teachers towards instructional technology use have become highly important. Recent research indicates that educational systems can work better if effective use of instructional technologies is implemented properly (Jonassen and Reeves, 1996). For language teachers instructional technologies are far more important owing to the fact that language learning is most successful when it is fostered by means of audio-visual aids. Wang and Li's (2002) study, for example, demonstrated that instructional technology has positive effect of technology for realizing effective learning. As such, English teachers should initially have positive attitudes towards the use of instructional technologies so that they can plan their lessons around technological audio-visual aids better.

Accordingly, this study focused on measuring pre-service English teachers' attitudes towards using and not using instructional technologies in general. For this purpose, 213 pre-service English teachers from all grade levels were selected from Hacettepe and Gazi universities. For data collection, the "instructional technology attitude scale" developed by Metin, Yılmaz, Coşkun & Birişçi (2012) was used. Pre-service English teachers' attitudes were investigated in five sub-dimensions. These are beliefs regarding (1) *beliefs about instructional technology use in lesson (BITU)*, (2) *appreciation of instructional technology use (AITU*), (3) *unappreciated instructional technology use (UITU),*(4) *disinclination to make use of instructional technology (DMIT*), and (5) *beliefs in the usefulness of instructional technology (BUIT*).

The general analysis of the data indicated that a moderate number of the participants have positive attitudes towards the use of instructional technologies (55.39%), and appreciate the use of instructional technologies (67.13%). As for the negative aspects, the study found that a majority of the students have negative attitudes towards technology use (49.29%) and a huge number of the participants indicated that they are against the ides of not using instructional technologies in lessons (86.38%). Finally, a huge number of the participants believe that using instructional technologies are useful in language lessons (85.91%). In short, the analysis found that pre-service English teachers have positive attitudes towards the use of instructional technologies in lessons.

Further statistical analyses were carried out in order to see whether gender accounts as an important factor in attitudes to computer use. The results of the t-test indicated that there is statistically significant difference between male and female students in terms of beliefs about the use of instructional technologies. Male teacher candidates were found to be more have more positive attitudes towards instructional technology use. The scope of the present study does not allow investigating the reasons behind this. However, in another study, the reason why male students have more positive attitudes towards instructional technology use can be investigated.

As a final step, an ANOVA was implemented in order to see whether there are any differences among different grade levels in terms of technology use. The results indicated

that there are differences between the first year students and the others in terms of beliefs about instructional technology use. First grade students rated themselves lower compared to other grade levels. Depending on this finding, it can be speculated that the process of teacher education process which students go through in ELT departments contribute to the development of positive attitudes towards the use of instructional technologies.

Today, many schools are being equipped with various instructional technologies to conduct technology enhanced education. Teachers are the key figures that determine the extent of technology integration in schools and classrooms. Thus, they are supposed to have positive attitudes to instructional technology use due to the fact that recent research has indicated that attitudes are closely linked to intention to use (Bullock, 2004, Teo, 2008, Govender, 2012). This finding was supported in Turkish context by a recent study. Çelik and Yeşilyurt's study (2013) found that attitudes to technology, perceived computer self-efficacy and computer anxiety are important predictors of teacher candidates' attitude toward using computer supported education. Therefore, although schools spare extensive budgets on instructional technologies, effective use of these technologies mainly depend on teachers and their attitudes towards their use (Huang & Liaw, 2005). The present study underlined the need for teacher education programs to provide environments and infrastructure for pre-service teachers to gain competence and confidence in using computers for teaching and learning.

Recent studies also indicated that another important enabling factor that encourages teachers to use instructional technologies is beliefs about constructivist pedagogy (Higgins and Moseley, 2001; Inan and Lowther, 2010). Some studies concluded that teachers with constructivist pedagogical beliefs integrated technology successfully in their classes (Ertmer, 2005). Therefore, future studies can be conducted on the relation between technology attitudes and constructivist pedagogy beliefs in Turkish context. In addition, there is a bulk of research that indicates that there is a close relationship between attitudes to instructional technologies and computer self-efficacy (Demiralay and Karadeniz 2010; Tezci, 2009; Topkaya, 2010; Çelik and Yeşilyurt, 2013). Therefore, future studies should also focus on how pre-service English teachers' computer self-efficacy can be strengthened.

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