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Investigating Attitudes of Social Sciences Pre-Service Teachers Towards Using Technology

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SUMMARY

The aim of the current study is to investigate the attitudes of Social Studies teacher candidates towards using technology. The participants of this study, which was designed as survey study, consisted of 150 1st year and 4th year teacher candidates from Social Studies Teaching Department at Education Faculty in Afyon Kocatepe University in 2017-2018 Fall term. The data were collected by using Technology Attitude Scale (Teknoloji Tutum Ölçeği; Yavuz, 2005). The collected data were analyzed through descriptive statistics and Independent Samples T-test. According to the findings of the study, it can be concluded that Social Studies teacher candidates had positive attitudes towards technology use. The results also demonstrated that Social Studies teacher candidates' attitudes towards using technology had a statistically significant relationship in terms of gender in favor of males. On the other hand, educational level did not correlate with the attitudes of Social Studies teacher candidates towards using technology.

Keywords: Technology, Attitude, Social Studies

INTRODUCTION

Rapid developments in science and technology have been affecting our lives in every aspect. It is impossible not to expect educational sector to stay unaffected by these developments in science and technology while these developments have tremendous effect on individuals. Using technology efficiently in education has many facilities and advantages as well as in other areas. The advantages of using technology in education are enhancing the performance in both teaching and learning, creating multiple learning environments, providing teaching and learning alternatives according to individual differences, helping students develop themselves by boosting their motivation and self-confidence, and increasing the students' interest in the class by taking their attention (Kaya, 2017; Yalın, 2007; Heafner, 2004; Bransford, 2000). In addition, Katrancı and Uygun (2013) mentions that using technology has some advantages like making lesson more interesting, preventing waste of time, being facilitative in terms of reaching the goal, and ensuring permanent learning, by highlighting that using technology is necessary in education.

Using technology in education has become crucial in order to meet the demands of changing and developing word. The teacher who has different roles in today's educational system, not only needs to utilize the technology but also has to teach how to use technology with the purpose of education to her/his students. However, in order to guide students successfully in the teaching-learning processes which was brought by the age, teachers should know how to use technology in the education process, plan and use educational technology in a proper and effective way in their classes, and be a role model for students in using technology (Uşun, 2006; Kaya, 2017; Sever, 2010). Since educational institutions and teachers spend time with students who use technological devices such as computers, internet, video, cd and mobile phones everyday, it is inevitable that they will encounter some difficulties if they do not develop their skills to use technology (Reiner, 2009). According to Güven (2001); teachers must follow the ever-evolving and changing world and adapt themselves to the change. The role of teachers is important in Children's and young's keeping up with these changes and protecting their self. In order to fulfil these roles well, teachers should not be behind the times, but should constantly renew themselves. Researches on educational technologies emphasize that it is very important for teachers to use educational technologies effectively and to provide their students with these skills (Korkmaz & Usta, 2010).

When the studies related to the use of technology of teachers and prospective teachers are examined, it is seen that as the positive attitudes and skills of using instructional technologies increase, the frequency and willingness of using these technologies increase, and teachers who do not believe in the necessity of using technology in the lesson will be reluctant to use technology in the lesson. It is known that such behavioural and emotional factors are more critical than external factors such as resources, administrative support, trainings and experiences, and that teachers' attitudes towards computers and lesson planning skills are directly affected by their beliefs about technology integration (Namlu, 1998; Ertmer, Conklin, Lewandowski, Osika, Selo and Wignall, 2003; Kosar, 2006).

Nowadays as the importance of educational technologies has increased both in Turkey and in the world, there has been some research on the integration technology into education. Together with the FATİH Project (Enhancing

Opportunities, Improving Technology Movement) which was implemented by Ministry of Education by with 2010-2015, classes were supported in terms of technology, equipped with computers and students was given out tablet computers. In addition, when we look at the Social Studies curriculum, we can see that the part for skills include technology; Digital Literacy Skills, and Research Skills. One of the seven domains of learning is Science, Technology and Society learning domain. In addition, in the special aims of the social studies course curriculum, there is an article including understanding science and technology development process and its effects on social life, and using information and communication technologies consciously.

The aim of this study is to examine the attitudes of the prospective social studies teachers use towards the use of technology. In this context, answers to the following questions were sought:

1) What are prospective social studies teachers' level of attitude towards the use of technology?
2) Do prospective social studies teachers' level of attitude towards the use of technology differs by gender?
3) Do prospective social studies teachers' level of attitude towards the use of technology differs according to class level?

METHOD

In this study, which aimed to investigate the attitudes of prospective social studies teachers' attitude towards the use of technology, the survey model is used. The survey model is used to learn the attitudes, beliefs, and opinions of the selected group on a particular topic. (McMillan ve Schumacher, 2006). The individual or the object, which are the subject of the research, are tried to be defined in its own conditions and as it is (Karasar, 2012). It is used to describe the characteristics of individuals or groups. (Fraenkel, Wallen ve Hyun, 2012).

Study Group

In the 2017-2018 academic year, a total of 150 prospective social studies teachers, 80 first grade and 70 fourth grade students from Afton Kocatepe University Faculty of Education participated in the study. 85 of the prospective teachers are female and 65 are male.

Table 1. Personal Information on the Studying Group

Gender	n	%
Female	85	56.6
Male	65	43.4
Level of Class		
First Grade	80	53.4
Fourth Grade	70	46.6
Total	150	100

In the study, Technology Attitude Scale which was developed by Yavuz (2005) was used to determine the attitudes of prospective social studies teachers towards technology use. The scale consists of 19 items and five factors such as "non-use of technological tools in the field of education, the use of technological tools in the field of education, the effects of technology on education, teaching the use of technological tools and evaluation of technological tools."

The scale items are 5 point Likert type and those are "I strongly agree(5), I agree (4), Undecided(3), Disagree(2) and Strongly Disagree(1)". There are 13 positive and 6 negative items on the scale. According to the data gathered, the choices of positive items were coded by giving a value from 5 to 1 and the choices of negative items were coded by inverting from 1 to 5. Cronbach's alpha value for the whole scale was calculated as 0.87. In this extent of study, Cronbach's alpha value for the whole scale was calculated as 0.89. The highest total score obtained from the scale, which is the 71 most positive attitudes; the lowest total score of 42 was indicated as the indicator of the most negative attitudes. The highest total score that can be obtained by selecting the option "undecided" is 57 and that's an indication of neutral situations. In other words, scores above 58 are for positive attitudes and scores below 56 are for negative attitudes.

Data Collection and Analysis

The mean and standard deviation values of prospective social studies teachers' attitudes towards the use of technology were examined. Independent samples t-Test was used to determine whether the attitudes of prospective social studies teachers towards technology use differs significantly in terms of some variables. Significance level was taken as .05 in the interpretation of the results. A statistical package program was used in all statistical analyses.

FINDINGS

Findings Regarding Social Science Teacher Candidates' Attitudes Towards Technology Use

The scores of the pre-service teachers in Technology Attitude Scale were analysed. The frequency and percentage distributions of the scores obtained from the scale were presented. The analysis results are given in Table 2.

Table 2. The Analysis Results of Pre-service Social Sciences Teachers' Attitudes Towards Technology Use

	Negative Attitudes		Neutral		Positive Attitudes	
Technology Attitude Scale	N	%	N	%	N	%
	33	22	12	8	105	70

Upon the analysis of Table 2, it is seen that 22% of pre-service social science teachers' attitudes towards the use of technology are negative; 8% of their attitudes are neutral and 70% of their attitudes are positive. Therefore, it can be said that teacher candidates think that the use of technological tools in teaching process has a positive effect on student achievement and motivation. In addition, it is understood that they have the idea that the opportunities provided by technology will have a positive effect on efficient studying and learning.

The Relationship Between Gender and Social Sciences Pre-Service Teachers' Attitudes towards Using Technology

Independent samples t-test was used to determine whether the mean scores of Social Sciences pre-service teachers from the Technology Attitude Scale differed according to gender. The analysis results are given in Table 3.

Table 3. Analysis Results of Social Sciences Pre-service Teachers' Gender and Their Attitudes Towards Technology Use

	Gender	N	$\bar{x}$	S	sd	t	p
Technology Attitude Scale	Female	85	67,10	15,39	148	2,68	0,008
	Male	65	71,39	11.00			

The results of the analysis of the participants' attitudes towards the use of technology according to their gender are given in Table 3. The sample consisted of 85 female, and 65 male pre-service teachers. The attitudes of male pre-service teachers ($\bar{x}$= 71,39) towards using technology are more positive than female pre-service teachers ($\bar{x}$ = 67,10). As a result of the analysis, it was found that this difference between female and male participants was statistically significant. It was seen that there was a significant difference between male and female pre-service teachers' attitudes towards using technology [t(148)=2,68, p<.05].

Relationship Between Grade Level of Social Sciences Pre-service Teachers and Their Attitudes Towards Technology Use

Independent samples t-test was used to determine whether the mean scores of Social Sciences pre-service teachers from the Technology Attitude Scale differed according to grade level. The analysis results are given in Table 4.

Table 4. The Relationship Between Grade Level of Social Sciences Pre-service Teachers and Their Attitudes Towards Technology Use

	Grade	N	$\bar{x}$	S	sd	t	p
Technology Attitude Scale	1	80	67,15	15,39	148	2,58	0,800
	4	70	67,87	15,30			

The results of the participants' attitudes towards the use of technology according to grade level are given in Table 4. The sample of the study consisted of 80 pre-service teachers from first grade, and 70 pre-service teachers from fourth grade. According to the results of the analysis, it is seen that the scores of the first grade pre-service teachers towards technology use ($\bar{x}_{80}$=67,15) are lower than the scores of fourth grade pre-service teachers towards technology use ($\bar{x}_{70}$=67,87). As a result of the analysis, it was found that this difference between the first and fourth grades was not statistically significant [t(148)=2,58, p>.05]. This finding shows that the grade level is not an important factor in the attitude towards the use of technology. This shows that teacher training process (Education Faculty, Bachelor's level) of the students does not have a significant effect on their attitudes towards the use of technology.

CONCLUSION AND DISCUSSION

The purpose of this study is to investigate the attitudes of social studies pre-service teachers toward using technology. This chapter contains the results in accordance with findings of this study. The results related to sub-problems of this research are as follows:

It can be said that there is positive attitude of social studies pre-service teachers toward using technology as a result of analyses. This finding of this study is parallel to the studies found in literature performed by Öztürk (2006), Cüre and Özdener (2008), Yılmaz (2008), Dawson (2008), Dargut and Çelik (2014), Kırmızı (2015), and Can and Kaymakcı (2016). The study performed by Kırmızı (2015) about technology usage of English pre-service teachers showed that English pre-service teachers have positive attitude toward technology usage. Another study done by Dargut and Çelik (2014) indicated that Turkish pre-service teachers have generally positive attitude toward technology usage. Similarly, Yılmaz (2008) have completed a study to investigate the attitudes of academicians in physical training department toward technology usage. This study demonstrated that the attitudes of academicians toward technology usage are positive. Congruently, the study performed on social studies pre-service teachers about attitude toward technology usage by Öztürk (2006) specified that pre-service teachers have positive attitude toward use of technology.

When investigated the attitudes toward technology usage in terms of gender difference of social studies pre-service teachers, it is found that there is a meaningful difference in favor of male participants. This finding of the study showed parallelism with the studies performed by Can and Kaymakcı (2016), Kırmızı (2015), Yılmaz (2012), Pektaş and Erkip (2006), and Deniz (2005). Yılmaz (2012) stated that attitudes of male teachers toward technology usage in education are more positive than female teachers in his study about teachers' technology usage in education. Similarly Kırmızı (2015) indicated that male pre-service teachers have more positive attitude than female re-service teachers in the study investigating attitudes toward technology usage of English pre-service teachers. Can and Kaymakçı (2016) have found similar results in the study performed on primary school pre-service teachers.

Another result gained from the study remarked that there is not a statistically meaningful difference between grade level of social studies pre-service teachers and technology usage. This finding of the study is parallel to the studies found in literature done by Dargut and Çelik (2014), and Can and Kaymakcı (2016). Dargut and Çelik (2014) have not found any statistically meaningful difference between grade level and technology usage in study performed with Turkish pre-service teachers. Can and Kaymakçı (2016) have performed a study with primary school pre-service teachers to investigate attitudes of pre-service teachers toward technology usage. Alike, they have not found any meaningful difference between grade level and technology usage.

Following suggestions have been derived according to the findings of the study:

1. Information and communication technologies laboratories and technologic infrastructure of classrooms found in education faculties can be improved.
2. In order to use technology in education more effectively, efficiency of Computer technologies I and II, and Education technologies and material design lectures found in social studies curriculum can be increased and also practicing lecture can be put in curriculum.
3. Pre-service teachers can be trained about technology usage in education and technological devices can be presented them.

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