Research in Social Sciences and Technology

TEACHERS' ATTITUDES TOWARD THE USE OF TECHNOLOGY IN SOCIAL STUDIES TEACHING[1]

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Abstract
Technology integration in education is one of the most popular topics in the last decades. Many countries have invested millions of dollars to equip classrooms with technological devices. As well as developed countries, Turkey has conducted several projects to provide technological devices and educational materials to classrooms. Thus, the purpose of this study is to examine teachers' attitudes toward the use of technology in social studies teaching. Understanding social studies teachers' attitudes is essential because it is one of the most important constructs of technology integration. The authors applied quantitative survey method and used cluster sampling to choose participants. The sample of the study consisted of 155 social studies teachers who are currently teaching at middle schools. The use of technology in social studies teaching attitude scale was used to collect data. The findings revealed that teachers have positive beliefs and attitudes toward the use of technology. Moreover, teachers who took educational technology and teaching material course and attended in-service training have more positive attitudes than others.
Keywords: Technology, social studies, attitude.

Introduction

Technology has been part of our daily life and also one of the main components of education (Açıkalın & Erdinç, 2005; Banister, 2010; Baytak, Tarman & Ayas, 2011; Cener, Acun & Demirhan, 2015; Evans, Kılınç, Waxman & Houston, 2012; Voogt, Tilya, & Van den

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Akker, 2009; Yücel, Acun, Tarman & Mete, 2010). Over thirty years, the importance of integrating technology into teaching and learning process has been discussed among educators (Armitage, 1993; Ayas, 2015; Chai & Khine, 2006; Kesten, 2010; Koehler & Mishra, 2009; Lowther, Strahl, Inan, & Ross, 2008; Yiğit, Çengelci, & Karaduman, 2013). Scholars and educators indicated that technology integration improves teaching (Williams, Linn, Ammon, & Gearhart, 2004), facilitates students' learning (Enriquez, 2010), advances higher order thinking (Fox & Henri, 2005), and allows teachers to create more student-centered classroom environment (Teo, Chai, Hung & Lee, 2008). Because of these expected outcomes, many countries have invested huge amounts of money to increase availability of technology in classrooms (Waxman, Evans, Boriack & Kılınç, 2013). As well as other developed countries, The Republic of Turkey has conducted several projects to equip classroom with new technologies in last decades. For instance, National Ministry of Education provided computer labs and teaching materials to schools in order to improve the quality of education with a project called Basic Education Project, which was completed between 1998 and 2004 (Pouezevara, Dinçer, Kipp & Sarıışık, 2013). Next, The Republic of Turkey designed a project called Movement to Increase Opportunities and Improve Technology (FATIH) to enhance equality of opportunity in education and to improve ICT use in teaching and learning processes in schools. FATIH intends to set up ICT hardware in 40,000 schools and 620,000 classrooms across Turkey.

As it seen above, technology has been accepted as a powerful tool that can help bring about transformation in education (Chigona, 2015). However, there are several barriers in front of technology implementation in the field of education. The lack of professional development is one of the most cited reasons for lack of technology implementation (Ertmer, Ottenbreit-Leftwich, Sadık, Sendurur & Sendurur, 2012). Results showed that teachers who attended technology related professional development (in-service training) have positive

attitudes toward the use of technology in their teaching (NEA, 2008; Gray, Thomas & Lewis, 2010). Also, providing educational technology course for pre-service teachers enables them to learn about technology integration before they start their career (An, Wilder & Lim, 2011). Another reason for lack of technology implementation is teachers' negative belief and attitudes (anxiety) toward technology. Several studies implied that teachers' beliefs and attitudes are the one of the most important constructs of technology integration (Andrew, 2007; Kim, Kim, Lee, Spector & DeMeester, 2013). Technology anxiety is defined as an attitude that is applicable to technology in various forms (Biggs & Moore, 1993). It is also defined as a negative emotional state by an individual when he/she uses technology or technology equipment (Bozionelos, 2001). Technology anxiety influences the use of technology in social studies teaching. According to Pajares (1992), in order to understand teaching practices, one must study on teachers' beliefs and attitudes because it is considered as an indicator of several behaviors in class. Because of technology adoption process are positively correlated with the teacher attitudes (Aldunate & Nussbaum, 2013), examining social studies teachers' attitudes toward the use of technology in social studies teaching is crucial.

The purpose of this study is to investigate teachers' attitudes toward the use of technology in social studies teaching. Understanding social studies teachers' attitudes is essential because it is a way to figure out how they integrate technology into their teaching. This paper is a part of project which aims to guide social studies teachers to develop digital teaching materials by training them on how to use technology on the process of teaching and learning and increase the level of educational technology usage in the social studies. In order to achieve these goals, the authors must understand how social studies teachers perceive technology integration into their teaching. Thus, this paper focused on the following research questions:

Research Questions

- To what extend are teachers' attitude levels about the use of technology in social studies teaching?
- Do social studies teachers' attitudes show significant difference by considering gender?
- Do social studies teachers' attitudes show significant difference by considering taking educational technology and material design course at college?
- Do social studies teachers' attitudes show significant difference by considering attending in-service trainings?

Method

The authors applied quantitative survey model in this study. In educational context, survey research is used to collect information to learn population groups' characteristics, opinions, attitudes, or previous experiences (Leedy & Ormrod, 2005). It is also used in education to understand current conditions (Ebel, 1980). Survey research is an eminent method for systematically collecting data from a broad spectrum of individuals and educational settings (Fraenkel & Wallen, 2003). The authors used survey method to describe current conditions of social studies teachers' attitudes toward technology integration into their class before they implement their research project about increasing the use of digital teaching materials in social studies teaching.

Sample

To select participants, the authors used cluster random sampling. Cluster random sampling is sometimes undertaken as an alternative to simple random sampling because it is not possible to select a sample of individuals from a population (Fraenkel & Wallen, 2003). Also, using cluster random sampling reduces research cost for a given sample size. In addition

cluster random sampling requires less time for listing and implementing the survey. The authors first decided to identification of the geographical areas of interest and chose two cities in the west part of Turkey. Then they randomly selected middle schools in these two cities during the 2015-2016 academic year.

The sample of the study consisted of 155 social studies teachers who are currently teaching at middle schools. Table 1 shows some demographic information of the participant.

Table 1

Demographic Information of the Participants

Gender	Frequency	Percentage
Female	82	52,9
Male	73	47,1
Total	155	100
Taking educational technology and material design course	Frequency	Percentage
Yes	68	43,9
No	87	56,1
Total	155	100
Attending in-service training	Frequency	Percentage
Yes	101	65,1
No	54	34,9
Total	155	100

The Survey

The use of technology in social studies teaching attitude scale, which was developed by the authors, was used to collect data. The survey was evaluated on a five point Likert scale strongly disagree -1, disagree -2, neither agree nor disagree -3, agree -4, strongly agree -5. The survey consisted of 24 items and three dimensions: beliefs, anxiety, and implementation. The first dimension has 11 items, the second has eight items, and the last one has five items. The general rule of the scale is that the higher score shows more agreement and the lower score shows less agreement with the statement. Table 2 shows interpretation of the scores.

Table 2

Interpretation of the Scores

Dimension	Lowest score	Highest score
Belief	11	55
Anxiety	8	40
Implementation	5	25

The authors calculated Cronbach alpha internal consistency coefficient of the whole scale and it was found .89. Also the author calculated internal consistency coefficient for each dimension. According to the test results Cronbach alpha internal consistency coefficient was found ,94 for belief dimension, .76 for anxiety dimension, and .85 for implementation dimension.

Analysis of the Data

The authors used descriptive analysis and independent sample t test with $\alpha = 0.05$ significance level in a statistical package program.

Results

The following results appeared from the study in order to obtain social studies teachers' attitude levels about the use of technology in social studies teaching.

Findings Related to First Research Question

The use of technology in social studies teaching attitude scale was applied to examine teachers' attitude levels about the use of technology in social studies teaching. Participants' responses mean and standard deviation of each item have shown in Table 3.

Table 3

Mean and Standard Deviation of Participant Responses for Belief Items

No	**Item**	**M**	**Sd**
7	Knowing how to use technology supports professional development.	4,19	,94
6	Teachers need to be informed about the use of technology.	4,18	,92

5	Using technology is an effective way to grab students' attention.	4,15	,93
1	Knowing how to use technology is important	4,14	1,02
2	Technology makes easier to realize difficult topic.	4,12	,92
11	Technology provides easiness to implement social studies activities.	4,11	,91
9	Technology enables the creation of alternative teaching techniques	4,11	,94
8	Teaching with computers offers real advantages over traditional method of instruction.	4,09	1,02
10	Using technology makes easier to reach social studies acquisitions.	4,04	1,00
4	Integrating technology into teaching increases student achievement.	4,03	,97
3	Using technology is waste of time.	1,85	1,01

Table 3 shows that participants have positive attitudes toward items in the belief dimension. The most accepted items are "Knowing how to use technology supports professional development" ($\bar{x}$=4.19), "Teachers need to be informed about the use of technology" ($\bar{x}$=4.18), and "Using technology is an effective way to grab students' attention" ($\bar{x}$=4.15). On the other hand, social studies teachers did not agree with the item "Using technology is waste of time" ($\bar{x}$=1.85).It can be concluded from the result that social studies teachers want to learn how to implement technology into their teaching and they want to be updated about the use of technology. Also teachers believed that technology is crucial to take students' attention during teaching-learning process. Moreover, through technology social studies teachers can create alternative teaching techniques.

Table 4

Mean and Standard Deviation of Participant Responses for Anxiety Items

No	**Item**	**M**	**Sd**
15	I feel confident in using technology.	3.77	.98
17	I am afraid that I might loss all of my technological data.*	3.02	1.21
19	I am concerned about my knowledge about using technology.*	2.92	1.18
13	I am afraid that I might damage technologic devices.*	2.66	1.22

18	I am afraid that I cannot communicate with all of my students by using technology.*	2.65	1.17
16	I am afraid that using technology negatively affects the quality of instruction.*	2.60	1.18
14	I hesitate to use technology for fear of making mistakes that I cannot correct.*	2.48	1.12
12	Working with technology makes me nervous.*	2.35	1.21

*Reverse item

Table 4 shows participants' anxiety levels towards using technology while they are teaching. The most agreed items are "I feel confident in using technology" ($\bar{x}$=3.77), "I am afraid that I might loss all of my technological data" ($\bar{x}$=3.02), and "I am concerned about my knowledge about using technology" ($\bar{x}$=2.92). On the other hand, social studies teachers did not agree with the item "Working with technology makes me nervous" ($\bar{x}$=2.35). Examining social studies teachers' technology anxiety is crucial because it affects their ability to use technology while they are teaching social studies. It can be concluded from participants' responses that their anxiety level is moderate.

Table 5

Mean and Standard Deviation of Participant Responses for Implementation Items

No	**Item**	**M**	**Sd**
22	I speak with my colleagues about using technology.	3.95	.87
20	I try to learn new applications related to the use of technology.	3.85	.88
24	I attend workshops related to technology use.	3.85	.90
21	I follow the development related to use technology.	3.81	.93
23	I encourage my colleagues to use technology.	2.80	.91

Table 5 shows that teachers have positive attitudes toward technology implementation into their teaching. The most agreed items are "I speak with my colleagues about using technology" ($\bar{x}$=3.95), "I try to learn new applications related to the use of technology" ($\bar{x}$

=3.85), and "I attend workshops related to technology use" ($\bar{x}$=3.85). On the other hand, social studies teachers did not agree with the item "I encourage my colleagues to use technology" ($\bar{x}$=2.80). The results showed that social studies teachers speak with their colleagues about how they use technology in social studies. However, they do not encourage each other to use technology in social studies teaching.

Findings Related to Second Research Question

The authors conducted an independent sample t-test to examine the hypothesis that social studies teachers' attitudes toward the use of technology in social studies teaching differ by considering gender. The test was not significant for belief dimension (t(153) = 943, p = .347), anxiety dimension (t(153) = 817, p = .415), and implementation dimension (t(153) = .-718, p = .474). According to this result, it can be concluded that social studies teachers' attitudes toward the use of technology did not differ by considering their gender.

Table 6

T-test Results about Social Studies Teachers Attitudes towards the Use of Technology by Gender

Dimension	Gender	N	$\bar{x}$	Sd	Df	t	p
Belief	Female	78	46,00	8,98	153	,943	,347
	Male	67	44,66	8,01			
Anxiety	Female	78	27,29	4,45	153	,817	,415
	Male	67	26,65	4,72			
Implementation	Female	78	19,15	3,68	153	-,718	,474
	Male	67	19,57	3,47			

Findings Related to Third Research Question

An independent sample t-test was conducted to evaluate the hypothesis that social studies teachers' attitudes about the use of technology differ by considering taking educational technology and material design course at college while they were student. The test was significant for belief (t(153) = 3.401, p = .001) dimension. Social studies teachers

who took educational technology and teaching materials course during their college years ($\bar{x}$ = 48.07) have more positive attitudes than other teachers who did not take the course ($\bar{x}$ = 43.42) on belief dimension. The effect size was calculated as *d=.59* and which can be interpreted as moderate (Cohen, 1992). There was no significant difference on anxiety and implementation dimensions. These findings indicated that offering social studies related technology course causes more positive attitudes towards the use of technology in social studies teaching.

Table 7

T-Test Results about Social Studies Teachers Attitudes Towards The Use Of Technology By Taking Educational Technology And Teaching Materials Course On College.

Dimension	Course	N	$\bar{x}$	Sd	Df	t	p
Belief	Yes	68	48,07	5,20	153	3,401	,001
	No	87	43,42	9,87			
Anxiety	Yes	68	27,55	4,73	153	1,138	,257
	No	87	26,66	4,43			
Implementation	Yes	68	19,69	3,45	153	1,109	,269
	No	87	19,04	3,66			

Findings Related to Fourth Research Question

An independent t-test was conducted to examine whether social studies teachers' attitudes show significant difference by considering attending in-service training. The test was significant for belief dimensions (t(153) = 2.258, p = .025). Social studies teachers who attended in-service training ($\bar{x}$ = 47.66) have more positive attitudes than other teachers who did not attend in-service training ($\bar{x}$ = 44.33) on belief dimension. The effect size was calculated and found d= .42 which can be interpreted as moderate (Cohen, 1992). There was no significant difference on anxiety and implementation dimensions.

Table 8

T-Test Results about Social Studies Teachers Attitudes Towards The Use Of Technology By Attending In-Service Training.

Dimension	In-service Training	N	$\bar{x}$	Sd	Df	t	p
Belief	Yes	101	47,66	6,50	153	2,258	,025
	No	54	44,33	9,13			
Anxiety	Yes	101	27,21	3,86	153	,315	,753
	No	54	26,95	4,89			
Implementation	Yes	101	19,11	3,42	153	-,523	,602
	No	54	19,44	3,66			

Conclusion

Technology integration into teaching and learning process has been discussed among scholars over the past decades. Huge amounts of money have been invested to provide technological devices and educational materials to schools. Nowadays, almost every middle and high school have interactive white boards. Also, many tablets have been distributed to high school students in Turkey. Through Movement to Increase Opportunities and Improve Technology (FATIH Project), National Ministry of Education have provided interactive white boards tablet computers and Internet network infrastructure to all schools in basic education (Pouezevara, Dinçer, Kipp & Sarıışık, 2013).

Examining teachers' beliefs and attitudes toward technology is an essential component of increasing the use of technology in teaching-learning process. In this paper, the authors analyzed social studies teachers' beliefs and attitudes toward the use of technology in social studies teaching. The findings revealed that teachers possess positive beliefs and attitudes toward the use of technology and the participant of the study viewed their own attitudes as facilitating technology integration. The findings of the paper supported previous researches (İpek & Acuner, 2011; Mahoney, 2009) which indicated that teachers have positive attitudes toward technology. The result of the study also showed that the acceptance of technology has been achieved by social studies teachers.

Another finding of the research showed that teachers' beliefs and attitudes toward the use of technology did not significantly differ by considering gender. It was found in previous studies that teachers attitudes toward the use of technology do not depend on gender (Akkoyunlu & Orhan, 2003; Arslan, 2008; Torkzadeh, Pflughoeft & Hall, 1999).

Technology-related professional development is one of the most important component of technology integration (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Also it is crucial to integrate technology based teaching practice course into teacher education program increase the use of technology. Providing teachers and teachers candidate how to use technology such as blogs, map tools, enable teachers to create new teaching practices for their classrooms (Ertmer, Ottenbreit-Leftwich, Sadık, Sendurur & Sendurur, 2012). The result of the study revealed that teachers who took educational technology and teaching material course and attended in-service training possess more positive attitudes than others. These findings supported previous research that indicated similar results (Kutluca & Ekici, 2010; Usluel, Mumcu, & Demiraslan, 2007). Nurturing preservice social studies teachers with technology skills, providing more technology related in service training, and enlarging it for all social studies teachers will increase the use of technology to prepare students to the future.

In brief, these results revealed that social studies teachers need several workshops which show them how to integrate technology into social studies teaching. These workshops should be specific and more social studies acquisitions oriented. Also, providing more social studies oriented technology workshops will increase teachers' beliefs and attitudes toward the use of technology in their teaching process and reduce teachers' technology anxiety level.

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