The Impact of ICT on Pupils' Achievement and Attitudes in Social Studies[1]

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Abstract

The aim of this study is to investigate the impact of teaching social studies with the help of CT on pupils' achievement in social studies. A history, geography and culture oriented theme was selected from the social studies curriculum for the research, Turks on the Silk Road. A multimedia CD, documentaries, PowerPoint and so on were used to teach social studies to 6th graders. The research design of the study is quasi experimental. Three different research tools were used to collect data: an academic achievement test, an attitude measurement scale on social studies education and an attitude measurement scale on ICT. When achievement post test scores were treated as dependent variable in blockwise regression analysis the followings are found: Pupils' attitudes towards the subject and ICT do not have an effect on their post-test achievement scores. However, their prior knowledge on the subject and the treatment i.e. teaching social studies with ICT have a positive effect on their achievement. Teaching social studies with ICT do not have any statistically significant effect on pupils' attitudes toward social studies lesson. Thus, it is recommended that teachers and policy makers should find ways to formulate effective ICT integration applications for social studies.

Keywords: Social studies, ICT, achievement, attitudes

ICT in Social Studies Education

There has been a strong emphasis in Turkey to integrate Information and Communication Technologies (ICT) in schooling by the governments in the last decade (M.E.B., 2011). Authorities governing Turkish education, and scholars alike are emphasizing the importance of educating pupils with knowledge and skills for independent and meaningful learning. This aim will be achieved better with the integration of ICT into teaching and learning process. Along with implementing projects to integrate ICT into education, the philosophy that lies under school curricula has also shifted towards constructivism (M. E.B., 2006).

Constructivist approach provides support for the importance of student-centred learning environment which promotes meaningful learning processes (Anderson, 2008). Because of this emphasis, there is great attention paid generic skills as well as knowledge.

Social studies curriculum (4th-7th grades) are also developed with a constructivist approach. Curriculum developers' vision of constructivist social studies is that pupils will be able to make sense of him/herself and the society at large when engaged in learning environments dealing with real life issues (M.E.B., 2006).

Social studies curriculum are developed with an interdisciplinary approach in Turkey (M.E.B., 2006). That is, the knowledge produced by the scholars of social sciences that are regarded as the basis for social studies such as history, geography, economics, sociology and so on is integrated in the curriculum in a way that in one lesson teaching and learning actives might be involving the knowledge and/or methods of all the social sciences mentioned above (Safran, 2004). Thus, social studies education in Turkey not only covers a wide range of knowledge bases produced by social sciences but also methodological approaches employed by social sciences in terms of skills education (Ata, 2012). Turkish social studies curriculum states that pupils should be educated to have knowledge, skills, attitudes and values. Those knowledge covers a very wide range of information from ancient Turkish history to geography, from culture to trade in nine different themes (from 4th grade to 7th grades) very much the same NCSS' definition of social studies and learning areas (NCSS, 1992 cited by Ozturk & Dilek, 2005).

The curriculum also state that there are some national and global values such as hospitality, honesty, being scientific, aesthetic and so on that have to be taught directly to pupils (Doğanay, 2012). Furthermore, there are also some generic skills such as critical thinking and creative thinking skills and social studies specific skills such as understanding chronology and change and continuity that have to be taught to pupils (Ata, 2012). Any given unit from the social studies curriculum covers all of the issues mentioned above. What current Turkish social studies curriculum tries to achieve those goals above is to engage pupils with current, rich and meaningful real life issues (Ata, 2012).

The subject of social studies is about real life for the real world. Pupils have experiences in real life. They bring those experiences into learning environments, and learning environments are affected by those experiences. Thus, it is important to incorporate real life issues in dealing with social studies pupils. It is also true that pupils' learning is more lasting when they deal with real life situations (Yanpar, 2011).Social studies cover a learning area that deals with abstract issues. Those abstract issues are difficult for some young pupils

with low cognitive development level. What is needed is to create learning environments that utilizes concrete materials and tools. Information and Communication Technologies (ICT) have potential in this sense for social studies (Gulbahar & Guven, 2008; Yesiltas & Sonmez, 2009).

ICT has the potential to bring real life issues into classrooms in a way that was not possible before in a traditional classroom setting. The flexible nature of ICT and the internet especially provide pupils (and others) with the opportunities for research, interaction, cooperation and collaboration (Cole, 2000). Utilizing moving and still images, conducting life histories, carrying out social research through ICT might make social studies meaningful and enjoyable which is otherwise might be considered a dull subject by some pupils (Dawson *et al.*, 2000; Acun, 2012).

ICT has tools for teaching, learning, research, information and interaction for pupils and educators. ICT integration into education might also have some ramifications for social studies (Beck & Eno, 2012; Acun, 2012). Especially, its ability to bring visual images of real life experiences through movies, documentaries and still images has great potential for younger pupils (Voogt, 2008; Dede, 2008).

ICT and Pupils' Achievement

The hype about ICT has also implications about its effect on pupils' achievement and engagement in learning activities. There is a great deal of research in line with this (Liaw *et al.*, 2007; Marwan & Sweeney, 2010; Teyfur, 2010; Efe, 2011). The implications of it are promising considering the infusion of ICT into every aspect of human life. Human experience as we know it has been changing in interaction, entertainment, commerce, health and education due to ICT. This change is immense and irreversible. Teachers have no or very little power on the infusion of ICT in pupils' lives. The positive impact of ICT on pupils' achievement is what educators would want to happen in a situation that is going to happen anyway. What they need is to adopt themselves and their practice to make the best out of ICT. However, it is not very easy for teachers to adopt effective integration strategies into their teaching practice due to several barriers (Sang *et al.,* 2011; Blackwell, *et al.*, 2013). It is not straightforward process to make pupils achieve better trough ICT integration (Fairlie & Robinson, 2013; Acun, 2014). A meta-analytic study about the relationship between ICT and pupils' achievement in comparison with traditional instruction have shown that ICT have a positive impact on pupils' achievement level (Liao, 2007). Some studies suggest that if barriers to ICT integration are identified and properly addressed ICT could be useful asset in

every level of education (Blackwell *et al.*, 2013; Archer *et al.*, 2014). There are other numerous studies claiming that ICT positively affect pupils' learning (Teyfur, 2010; Watson, Mong & Harris, 2011; Pili & Aksu, 2013). The essence of these studies suggest that because of ICTs' flexible nature, educators (and pupils themselves) can find ways to accommodate pupils' need for better achievement. Despite these theoretically sound advantages of ICT, there is a little evidence that it actually makes any difference in pupils' achievement levels in social studies (Maddux & Cummings, 2004; Lai, 2008). Supporting the critical stance of some researchers, there is also a recent quasi-experimental research showing that there is no evidence that ICT has an effect on human rights, democracy and citizenship education which falls under social studies research and teaching area (Acun, 2014). Thus, it was necessary to design a research and formulate research questions to examine the impact of ICT on pupils' achievement in a sample specific social studies course.

There is also another issue related to ICT in teaching and learning, the attitudes. Attitudes appear to be having an impact on peoples' use of ICT and using ICT in turn might be having an impact on peoples' attitudes towards ICT itself.

ICT and Attitudes

Attitudes and dispositions are important factors that might be having an effect on teaching and learning. Human behaviors are affected by attitudes and may be vice versa (Senemoglu, 2008). What is certain is the key role of attitudes on human motivation and learning. Thus, educators have been trying to understand ways in which learning is best nurtured through improved attitudes of learners.

Although there appears to be a potential for social studies educators to use ICT, they do not utilize its potential even to let pupils access to the content of the subject (Zhao & Bryant, 2006).Among many possible variable that might be affecting their use of ICT, their perceptions and attitudes might be very important factors in their (lack of) usage. There are some contradicting findings about the relationship between attitudes and ICT usage in education. Nevertheless, the attitude of a person is a factor in integration of ICT in teaching and learning (Kzenek & Christensen, 2008). Positive attitudes towards ICT might have an effect on its usage by individuals for educational purposes (Liaw *et al.* 2007; Marwan & Sweeney, 2010; Yucel *et al*, 2010; Efe, 2011).

Another factor in individual domain is individuals' belief about its usefulness (Ertmer, 2005). Teachers and pupils should believe the technology is useful for their purposes. If they believe ICT is useful for them, the logical conclusion is that they bear positive attitudes

towards ICT. One might expect, then, positive attitudes will lead to more intensive use of it in educational settings. Intensive use of ICT may not automatically bring about the success in pupils' attainment level in schools. However, some other studies claim that ICT can be used to form positive attitudes towards any given lesson. Attitudes therefore play another important role in the issue of integrating ICT in teaching and learning (Kao & Tsai, 2009; Yılmaz & Alıcı, 2011).

Apart from ICT's potential in knowledge domain in the classroom, it has some features that could be used to address pupils' affective domain. Many of its tools have motivational implications for educators. It also has more potential especially subjects like social studies when dealing with affective domain. A short video of a case about poverty might create the desired effect on pupils' emotions for example. It appears that ICT has an effect on attainment level and attitudes of pupils. Thus, it is crucial for educators to understand how to exploit its potential.

There is growing interest in Turkey in trying to find out ways in which ICT can be used best in education. This interest is arising not only because of the natural dissemination of ICT in every aspect of life but also governmental initiatives such as FATIH project (a multimillion dollar ICT infrastructure project for schools in Turkey). In line with this trend there is also research interest. However, this research interest is only partially reflected for the relationship between ICT and social studies. What is missing is that there is very little casual empirical data to examine the effect of ICT on pupils' achievement and attitudes towards social studies education in Turkey. In order to test the expected positive results of integrating ICT into social studies teaching a unit that was eligible to use ICT tools were chosen by the researchers for the experimental research mentioned in detail in the method section. The unit that was chosen from social studies curriculum for the experimental study was 'The Turks on the Silk Road'.

Turks on the Silk Road unit was chosen for the purpose of the experiment. The unit is the third unit in social studies curricula for 6th graders in Turkey. The unit mainly deals with the historical, geographical and cultural issues concerning the era of migration and resettlement of Turkish tribes from central Asia to Minor Asia (Turkey) between 4th century BC and 15th AD century (M.E.B., 2006). Thus, it covers a wide range of historical and cultural transformational issues such as converting to Islam from Shamanic belief system and adopting to settled life style from nomadic life style. These issues suit best to use documentaries, internet research, the interactive CD and PowerPoint during teaching and learning in the classroom.

Thus this paper deals with the following research questions;

- Does using information and communication technologies have a positive effect on pupils' achievement level in social studies?

- Does using information and communication technologies have a positive effect on pupils' attitudes towards social studies?

- Does using information and communication technologies have a positive effect on pupils' attitudes towards ICT itself?

Method

Research Design

The study employs a quasi-experimental research design. The subjects of the study were two groups of 6th grade pupils of a state/public primary school in Izmir, Turkey. The number of pupils in both experiment and control groups were the same i.e. each group was consisted of 35 pupils. The school did not allow the researchers to assign control and experimental groups randomly. However, both groups of pupils were similar in terms of number of pupils, gender compositions, academic achievement level in the school and their socio-economic status before the experiment. Those variables were treated as covariates in the analysis.

Data Gathering Tools, Data Collection and Analysis

Three different research tools were used to collect data: an academic achievement test on 'Turks on the Silk Road' unit, an attitude measurement scale on social studies education and an attitude measurement scale on ICT. In order to understand the possible positive impact of ICT usage on pupils' achievement level, a valid and reliable achievement test was necessary. It was also necessary to understand its effect on pupils' attitudes towards the subject and ICT. Thus, ICT and social studies attitude measurement scales were developed. The research instruments developed in the following manner; the researchers developed a pool of multiple choice (4 choices for each question) questions for the unit that has to be taught during the experiment period. The pool of questions was crosschecked by three other teachers of social studies. Taking into consideration their criticism, some of the questions were omitted (8 in total) and some question added (2 in total) to make sure content validity has been reached. There were 40 questions left for the pilot study. The achievement tests (and attitude scales) were piloted with 120 pupils. After running test for reliability and difficulty for the items, there were 30 questions were left. Exactly the same procedures were followed for the attitude measurement tests. The only differences were that the item pool consulted by

experts was other social studies researchers rather than teachers, and the number of the items were varying from test to test. After piloting all the research tools reliability of social studies achievement test is .84 Cronbach's Alpha. Reliability of social studies attitude measurement scale is .89 Cronbach's Alpha. Reliability of the ICT attitude measurement scale is .97 Cronbach's Alpha. The data was collected both at the beginning (pre-test) and the end (post-test) of the application from both experiment and control groups through these instruments. Data was subjected to mean, one way ANOVA and Regression analysis.

The treatment

Because of the knowledge, skills and values that are covered in 'The Turks on the Silk Road', there were numerous opportunities for the teacher to integrate ICT in the teaching process. The teacher utilized a CD containing factual information about Turkish states that were established and demolished during the time period covered by the unit. The CD contains drill and practice applications, digital historical maps and some simple (flash) simulations. The teacher also used documentaries about nomadic life style, cultural artifacts and geographical terrain in Central and Minor Asia. The teacher also used internet resource for pupils to do research and reach resources.

Having decided on which group (class) will be the experimental group and which one is the control group, the researchers applied data collecting tools as pre-test at the beginning of the treatment. Then, the treatment started for the experimental group. The treatment lasted for 5 weeks (this is the time allocated officially for the unit). At the end of the treatment the same data collecting tools were given to pupils as post-tests.

Findings

The differentiations between pre-test and post-test scores of experimental and control groups from the achievement test, ICT attitudes and social studies attitudes scales are given below.

Table 1. *The differentiation between pre-test and post test scores of experimental and control groups from the achievement test, ICT attitudes scale and social studies attitude scales.*

	Group	N	Mean	*SD*	S Error	*t*	*p*
ICT Atti. pre-test	Experimental	35	3.4731	.33679	.05693	.772	.443
	Control	35	3.3832	.60033	.10147		
ICT Atti. post-test	Experimental	35	3.4370	.45487	.07689	1.996	.050
	Control	35	3.2193	.45750	.07733		

Soc. Stu. Atti. pre-test	Experimental	35	3.4641	.50546	.08544	-2.347	.022
	Control	35	3.6994	.31021	.05243		
Soc.Stu.Atti. post-test	Experimental	35	2.3407	.28016	.04736	-2.311	.024
	Control	35	2.4733	.19178	.03242		
Achievement pre-test	Experimental	35	18.6857	6.25334	1.05701	2.135	.036
	Control	35	15.6571	5.59907	.94642		
Achievement post-test	Experimental	35	20.4571	5.04884	.85341	3.643	.001
	Control	35	16.0286	5.14773	.87013		

$p< .05$

There is no statistically significant difference between experimental and control groups on their ICT attitudes pre-test scores. This means that both groups of pupils' attitudes towards ICT were similar at the beginning of experiment. However, there is a significant difference between experimental and control groups' ICT attitudes post-test scores in favor of experimental group. It seems that the treatment had a positive effect on pupils' attitudes towards ICT.

The table shows that there was statistically significant difference between experimental and control groups' attitudes towards social studies education in favor of control group at the beginning of experiment. There was still significant difference between those two groups in favor of control group about their attitudes towards social studies according to their post-test scores. Post-test scores of both groups were lower than their pre-test scores on social studies attitudes scale. This means the treatment did not improve experimental group's attitudes towards social studies education.

Experimental group's academic achievement pre-test scores were significantly higher than control group's scores. Their post-test scores on academic achievement were also higher than control group's scores. The difference between post-test scores of both groups on achievement test was much greater than their pre-test score on achievement test. This means, the treatment had a positive effect on pupils' academic achievement.

In order to understand the variables' effects on observed variance in pupils post-test scores on academic achievement test, blockwise regression analysis was carried out.

Table 2. *Blockwise regression model of pupils' achievement post-test scores*

Model	R	R square	Adj. R square	Std. Error	Change Statistics				
					R square Change	F Change	df1	df 2	F Change P(sig.)
1	.474	.225	.189	4.91094	.225	6.369	3	66	.001

2	.502	.252	.194	4.89669	.028	1.192	2	64	.310
3	.589	.347	.285	4.61193	.095	9.147	1	63	.004

When achievement post-test scores were treated as dependent variable, and achievement, social studies attitude and ICT attitude scales pre-test scores entered as first block, social studies attitude and ICT attitude scales post-test scores entered as second block, group as in experiment and control group entered as the final group in blockwise regression analysis, 35 per cent of variance in pupils' post-test scores of academic achievement test in social studies was explained.

Those variables included in the first block explained 23 per cent of variance in pupils' academic achievement post-test scores ($R = .474$, $R^2 = .225$, $p < .05$). The variables included in the second block did not contribute in explaining the variance in pupils' academic achievement post-test scores ($R = .502$, $R^2 = .252$, $p > .05$). The variable included in the third block explained 10 per cent of the variance in pupils' academic achievement post-test scores ($R = .589$, $R^2 = .347$, $p < .05$).

Table 3. *Standardized regression coefficients of pupils' achievement post-test scores*

Independent Variables		Unstandardized coefficients		Standardized coefficients	*t*	*p*
		B	S. Error	Beta		
	Constant	13.847	8.531		1.623	.110
1	ICT Atti. pre-test	-1.200	1.220	-.106	-.984	.329
	Soc. Stu. Atti. pre-test	2.888	1.436	.229	2.012	.049
	Achievement pre-test	.355	.104	.383	3.430	.001
2	ICT Atti. post-test	.381	1.288	.033	.296	.768
	Soc.Stu.Atti. post-test	-1.715	2.501	-.077	-.686	.496
3	Group	-3.775	1.248	-.349	-3.024	.004

Regression analysis shows that pupils' academic achievement levels were not affected by their attitudes towards ICT and social studies. Their academic achievement is affected by their prior knowledge on the subject matter (achievement pre-test scores) and learning method i.e. learning social studies with the help of ICT. Their prior knowledge and delivery method

affect pupils' achievement positively. Pupils in the experimental group have statistically significant higher post-test achievement scores that those in the control group. The second regression analysis is carried out to understand the variables' effect on pupils' attitudes on social studies.

Table 4. *Blockwise regression model of pupils' social studies attitudes post-test scores*

Model	R	R square	Adj. R square	Std. Error	Change Statistics				
					R square Change	F Change	df1	df2	F Chg. P(sig.)
1	.357	.128	.088	.23541	.128	3.215	3	66	.028
2	.404	.163	.098	.23410	.036	1.373	2	64	.261
3	.442	.195	.118	.23144	.032	2.477	1	63	.121

When pupils' social studies attitudes post-test scores were treated as dependent variable, and achievement, social studies attitude and ICT attitude scales pre-test scores entered as first block, ICT attitude scales post-test scores and achievement post-test scores entered as second block, group as in experiment and control group entered as the final group in blockwise regression analysis, 20 per cent of variance in pupils' post-test scores of academic achievement test in social studies was explained.

Those variables included in the first block explained 13 per cent of variance in pupils' social studies attitudes post-test scores (R=.357, R²=.128, p<.05).The variables included in the second block did not contribute in explaining the variance in pupils' social studies attitudes post-test scores (R = .404, R² = .163, p > .05).The variable included in the third block did not contribute in explaining the variance in pupils' social studies attitudes post-test scores(R=.442, R²= .195, p > .05).

Table 5. *Standardized regression coefficients of pupils' social studies attitude post-test scores*

Independent Variables		Unstandardized Coefficients		Std. Coefficients	*t*	*p*
		B	S. Error	Beta		
	Constant	1.788	.374		4.774	.000
1	ICT Atti. pre-test	.002	.062	.004	.030	.976
	Soc. Stu. Atti. pre-test	.141	.072	.247	1.949	.056

	Achievement pre-test	.010	.006	.249	1.894	.063
2	ICT Atti. post-test	-.043	.064	-.082	-.665	.508
	Achievement post-test	-.004	.006	-.096	-.686	.496
3	Group	.103	.066	.211	1.574	.121

Analysis shows that no single variable contributed to explaining the observed variance in pupils' attitudes towards social studies education. Sometimes it may not be possible to explain observed variance in any given behavior by one single variable. Regression type analysis is used to analyze the variables in blocks which bear similar characteristics as in the analysis above. Although no single variable is important in explaining pupils' attitudes towards social studies, their pre-test scores of achievement test, social studies attitudes and ICT scores altogether have an impact on pupils' forming attitudes towards social studies.

The third regression analysis is carried out to understand the variables' effect on pupils' attitudes on ICT.

Table 6. *Blockwise regression model of pupils' ICT attitudes post-test scores*

Mo del	R	R square	Adj. R square	Standard Error	Change Statistics				
					R square Change	F Change	df1	df2	F Change P(sig.)
1	.383	.146	.108	.44536	.146	3.775	3	66	.015
2	.402	.161	.096	.44834	.015	.563	2	64	.572
3	.407	.166	.086	.45070	.004	.332	1	63	.567

The third regression analysis treated pupils' attitudes toward ICT as dependent variable. No single variable had any significant effect in explaining observed variance in pupils' attitudes towards ICT. The first block variables of ICT attitudes, social studies attitudes and achievement pre-test scores explained 15 per cent of observed variance (R=.383, R^2=.146, p<.05). Second block variables of social studies achievement and attitude post-test score (R= .402, R^2= .161, p> .05) and third block variable of group did not have any effect in explaining the observed variance (R = .407, R^2 = .166, p> .05). Nevertheless, the three blocks all together explained 17 per cent of observed variance in pupils' attitudes towards ICT. Only the first block variables affected pupils' attitudes towards ICT positively.

Table 7. *Standardized regression coefficients of pupils' ICT attitude post-test scores*

Independent Variables	Unstandardized coefficients		Standardized coefficients	*t*	*p*
	B	S. Error	Beta		
Constant	3.619	.718		5.038	.000
ICT Atti. pre-test	.221	.117	.226	1.891	.063
1 Soc. Stu. Atti. pre-test	-.222	.142	-.204	-1.566	.122
Achievement pre-test	.012	.011	.155	1.137	.260
Achievement post-test	.004	.012	.042	.296	.768
2 Soc. Stu. post-test	-.163	.244	-.085	-.665	.508
3 Group	-.075	.130	-.080	-.576	.567

The analysis shows that the treatment and pupils' achievement and social studies post-test scores do not have any effect on their attitudes towards ICT. Nevertheless, the first block variables which are not important on their own have a positive effect on pupils' attitudes towards ICT.

One of the interesting points is that pupils' pre-test attitudes towards social studies are negatively correlated with their pre-treatment attitudes towards ICT. Although statistically not significant, similar result is observed with their post-test scores of social studies and ICT attitudes scales. The effect of pupils' social studies attitudes post-test scores on their ICT attitudes scores is less than their social studies attitudes pre-test scores' effect on their pre-test ICT attitudes scores. This finding means that the pupils whose achievement test scores are higher statistically have slightly higher positive attitudes towards ICT as a result of the treatment.

Discussion and Conclusion

The study shows that ICT integration into the classroom has a slightly positive effect on pupils' achievement. This finding is supported by the literature too, as explained in theoretical background of this article (see also Watson, Mong& Harris, 2011; Pili &Aksu, 2013). The positive impact of ICT on pupils' achievement is what educators would want to happen in a situation that is going to happen anyway. What they needed here is that teachers should adopt teaching methods and materials to integrate ICT into their teaching practice. The teacher by using an interactive CD which contains historical facts, still and moving images, questions, feedbacks and digital maps, and employing more student centered teaching approach such as group work and inquiry based teaching, appears to make a small contribution to pupils' achievement level. It is not straightforward process to make pupils

achieve better trough ICT integration (Underwood and Dillon, 2011; Acun, 2014). Therefore, it is suggested hereby that teachers training programs of ICT integration has to subject oriented and carried out in a workshop manner over a long period of time.

Contrary to achievement and many research findings (Shieh, 2012; Chien *et al,* 2012) ICT did not have any effect on pupils' attitudes towards social studies in this study. This finding is supported one of recent study (Acun, 2013). Because there are many research reports both supporting and rejecting the finding that ICT does not have any effect on pupils' attitudes towards the subject in question, it is suggested by this study that further research (especially qualitative studies) should be carried out.

However, it did have an effect on pupils' attitudes towards ICT. Familiarity and knowledge are important for people to have positive attitudes towards ICT (Yucel *et al*., 2010; Blackwell, *et al.*, 2013). Pupils in this study formed positive attitudes after realizing potential of ICT in their learning. Positive attitudes towards ICT not necessary will have a positive effect on pupils' attitudes towards the subject or on achievement. It may be worth noting that pupils' attitudes towards ICT might lead to frequent use of ICT. Nevertheless, the quality of its use matters the most, non-academic use may hinder learning (Ravizza, Hambrick & Fenn, 2014). Therefore, it is suggested with this study that teachers' focus should not be misled by the positive attitudes towards ICT but they ought to really focus on achievement and attitudes towards subject matter.

Findings from regression analysis suggest that the pupils' attitudes towards the subject i.e. social studies and ICT do not have an effect on their post-test achievement scores. However, their prior knowledge on the subject and the treatment i.e. teaching social studies with ICT have a positive effect on their achievement. Those pupils in the experiment group had higher achievement test scores than the pupils in control group did. This might be the most important finding in this study. The implication of this finding on social studies (and on similar subjects) might be important. What we know now from this particular study is that there is a glimmer of hope that teachers can help their pupils achieve better with the help of ICT. As with other innovations in education, the impact ICT on pupils' achievement is not very apparent. Nevertheless, there is an opportunity to improve pupils' learning by adopting new ways and materials with ICT.

The blockwise regression analysis also suggests that teaching social studies with ICT do not have any statistically significant effect on pupils' attitudes toward social studies lesson. The claim about the effect of ICT on pupils' attitudes was not valid for this study. Teachers and other educators might be able to use ICT in ways to make pupils' attitudes better.

However, a study designed to measure ICT's effect on pupils' achievement did not yield any fruitful result to better their attitudes towards the subject. Therefore, it could be suggested that a study could be designed to measure attitudes of pupils towards ICT both qualitative and quantitatively.

References

Acun, I. (2012). Bilgisayar destekli ogretim uygulamalari. C. Ozturk (ed.).*Sosyal bilgiler ogretimi* (2. ed., pp.344-364). Ankara: PegemA.

Acun, I. (2013). Attitudes in a web-supported learning environment. *Education,* 5(2), 562-569.

Acun, I. (2014). Web-supported effective human rights, democracy and citizenship education? *Computers & Education.* 70, 21-28.

Anderson, R. E. (2008). Implication of the information and knowledge society for education. In J. Voogt, & G. Knezek (eds.), *International handbook of information technology in primary and secondary education.* (pp. 5-22). New York: Springer.

Archer, K., Savage, R., Sanghera-Sidhu, S., Wood, E., Gottardo, A. & Chen, V. (2014). Examining the effectiveness of technology use in classrooms: A tertiary meta-analysis. *Computers & Education.* 78, 140-149.

Ata, B. (2012). Sosyal bilgiler ogretim programi. C. Ozturk (ed.), *Sosyal bilgiler ogretimi* (2. ed pp. 33-47). Ankara: PegemA

Beck, D. & Eno, J. (2012). Signature pedagogy: A literature review of social studies and technology research. *Computers in Schools*, 29, 70-94.

Blackwell, C. K., Lauricella, A. R., Wartella, E., Robb, M. & Schomburg, R. (2013). Adoption and use of technology in early education: The interplay of extrinsic barriers and teacher attitudes. *Computers & Education.* 69, 310-319.

Cole, R. (ed.). (2000).*Issues in web-based pedagogy,* London: Greenwood Press

Chien, H.-M, Kao, C.-C.Yeh, I.-J.& Lin, K.-Y. (2012). Examining the relationship between teachers' attitudes and motivation toward web-based professional development: A Structural equation modeling approach. *The Turkish Online Journal of Educational Technology,* 11 (2), 120-127.

Dawson, K., Bull, G., & Swain, C. (2000). Considerations for the diffusion of technological innovations in social studies teaching and learning. *Theory and Research in Social Education,* 28(4), 587-595.

Dede, C. (2008). Theoretical perspectives influencing the use of information technology in teaching and learning. In J. Voogt, & G. Knezek (eds.), *International handbook of information technology in primary and secondary education* (pp.43-59). New York: Springer.

Doganay, A. (2012). Degerler egitimi. C. Ozturk (ed.).*Sosyal bilgiler ogretimi* (2. ed., pp.344-364). Ankara: PegemA.

Efe, R. (2011). Science student teachers and educational technology: Experience, intentions, and value. *Educational Technology & Society*, 14(1), 228–240.

Ertmer, P. A. (2005). Teacher pedagogical beliefs: the final frontier in our quest for technology integration? *Educational Technology Research and Development*. 53(4), 25–39.

Fairlie, R. W. & Robinson, J. (2013). Experimental evidence on effects of home computers on academic achievement among school children. *NBER working paper no. 19060.* On-line http://www.nber.org/papers/w19060. Last accessed 18.09.2014.

Gulbahar, Y. & Guven, I. (2008). A survey on ICT usage and the perceptions of social studies teachers in Turkey. *Educational Technology & Society*, *11* (3), 37-51.

Kao, C.-P. & Tsai, C.-C. (2009).Teacher's attitudes toward web-based professional development, with relation to internet self-efficacy and beliefs about web-based learning. *Computers & Education,* 53, 66-73.

Kzenek, G. & Christensen, R. (2008). The importance of computer attitudes and competencies in primary and secondary schools. In J. Voogt & G. Kzenek (eds.). *International handbook of information technology in primary and secondary education* (pp. 321-328). New York: Springer.

Lai, Kwok-Wing (2008). ICT supporting the learning process: The premise, reality and promise. In J. Voogt, & G. Knezek (eds.). *International handbook of information technology in primary and secondary education*. (pp. 215-227). New York: Springer.

Liao, Y. C. (2007). Effects of computer-assisted instruction on students' achievement in Taiwan: A meta-analysis. *Computers & Education*. 48, 216-233.

Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). Surveying instructor and learner attitudes toward e-learning. *Computers & Education,* 49, 1066-1080.

Maddux, C. & Cummings, R. (2004). Fad, fashion, and the weak role of theory and research in information technology in education. *Journal of Technology and Teacher Education*, *12*, 511–533.

Marwan, A. & Sweeney, T. (2010). Teachers' perceptions of educational technology integration in an Indonesian polytechnic. *Asia Pacific Journal of Education,* 30 (4), 463–476.

McLoughlin, C. & Luca, J. (2000). Cognitive engagement and higher order thinking through computer conferencing: We know why but do we know how? *Teaching and Learning Forum 2000*. htpp://cleo.murdoch.edu.au/confs/tlf/tlf2000/mcloughlin.html. Last accessed 16.03. 2004.

M.E.B. (2006). *Ilkogretim sosyal bilgiler dersi 6.sinif ogretim programi ve kilavuzu.* Ankara

M.E.B. (2011). FATIH projesi. On-line: http://fatihprojesi.meb.gov.tr/tr/index.php last accessed at 02.01.2014.

Ozturk, C &Dilek, D. (2005). Hayat bilgisi ve sosyal bilgiler ogretim programları. C. Ozturk& D. Dilek (eds.). *Hayat bilgisi ve sosyal bilgiler ogretimi.* (pp. 3-22). Ankara: PegemA

Pilli, O. & Aksu, M. (2013). The effects of computer-assisted instruction on the achievement, attitudes and retention of fourth grade mathematics students in North Cyprus. *Computers & Education*, 62, 62-71.

Ravizza, S. M., Hambrick, D. Z. & Fenn, K. M. (2014). Non-academic internet use in the classroom is negatively related to classroom learning regardless of intellectual ability. *Computers & Education*, 78, 109-114.

Sang, G., Valcke, M., van Braak., Tondeur, J. & Zhu, C. (2011). Predicting ICT integration into classroom teaching in Chinese primary schools: Exploring the complex interplay of teacher-related variables. *Journal of Computer Assisted Learning,* 27, 160-172.

Safran, M. (2004). Ilkogretim programlarında yeni yaklasimlar sosyal bilgiler (4–5. sinif)" *Bilim ve Aklin Aydinliginda Egitim Dergisi*, 5 (54–55), on-line http://yayim.meb.gov.tr/dergiler/sayi54-55/safran.htm. Last accessed 12.01.2008.

Senemoglu, N. (2008). *Gelisim, ogrenme ve ogretim: Kuramdan uygulamaya*. Ankara: Gazi Kitabevi

Shieh, R. S. (2012). The impact of technology enabled active learning (TEAL) implementation on student learning and teachers' teaching in high school context. *Computers & Education,* 59. 206-214.

Teyfur, E. (2010). Yapılandırmacı teoriye gore hazırlanmış bilgisayar destekli öğretimin 9. Sınıf coğrafya dersinde öğrenci tutumu ve başarısına etkisi. *Ahi Evran Üniversites*i *Eğitim Fakültesi Dergisi*, 11 (3), 85-106

Underwood, J. & Dillon, G. (2011).Chasing dreams and recognizing realities: teachers' responses to ICT. *Technology, Pedagogy and Education.* 20 (3). 317-330.

Voogt, J. (2008). IT and the curriculum processes: Dilemmas and challenges. In J. Voogt, & G. Knezek (Eds.), *International handbook of information technology in primary and secondary education* (pp.117-128). New York: Springer.

Watson, W. R., Mong, C. J. & Harris, C. A. (2011).A case study of the in-class use of a video game for teaching high school history. *Computers & Education*, 56, 466-474.

Yanpar, T. (2012). Etkili ve anlamli ogrenme icin kuramsal yaklasimlar ve yapilandirmacilik. C. Ozturk (ed.), (2nded.) *Sosyal bilgiler ogretimi* (pp.51-76). Ankara: PegemA

Yesiltas, E. & Sonmez, O. F. (2009). Sosyal bilgiler ogretiminde bilgisayar kullanimi ve bilgisayar tabanli material gelistirme. R. Turan, A. M. Sunbul & K. Ulusoy (eds.). *Sosyal bilgiler ogretimi* (pp.387-413). Ankara: PegemA

Yılmaz, N. & Alıcı, S. (2011). Investigating pre-service early childhood teachers' attitudes towards the computer based education in science activities. *The Turkish Online Journal of Educational Technology,* 10 (3), 161-167.

Yucel, C., Acun, I., Tarman, B. & Mete, T. (2010). A Model to explore teachers' ICT integration stages. *The Turkish Online Journal of Educational Technology,* 9(4), 444-456.

Zhao, Y. & Bryant, F.L. (2006). Can teacher technology integration training alone lead to high levels of technology integration? A qualitative look at teachers' technology integration after state mandated technology training. *Electronic Journal for the Integration of Technology in Education,* 5,53-62.

Bilgi ve İletişim Teknolojilerinin (BİT) Sosyal Bilgiler Öğretiminde Öğrenci Başarısı ve Tutumuna Etkisi[5]

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***Özet*:** Bu çalışmanın amacı bilgi iletişim teknolojileri kullanımının sosyal bilgiler dersinde öğrenci başarı ve tutumu üzerine etkisini ortaya koymaya çalışmaktır. Sosyal bilgiler 6. sınıfta İpek Yolunda Türkler ünitesi işlenirken bir multi-medya CD, belgesel, Microsoft Office gibi BİT araçları kullanılmıştır. Bu araştırmanın ön test, son test deney ve kontrol gruplu yarı-deneysel bir araştırmadır. Bu araştırmanın veri toplama araçları; bir erişi testi, sosyal bilgiler tutum ölçeği ve teknoloji tutum ölçeğinden oluşmaktadır. Uygulama İzmir'de bir devlet İlköğretim (şimdilerde bir ortaokul olan) okulunda mevcut olan 6. sınıf öğrenci sınıflarında herhangi ikisiyle (deney ve kontrol) gerçekleştirilmiştir. Verilerin analizlerine göre bilişim teknolojileri destekli sosyal bilgiler öğretiminde öğrencilerin başarılarında bir artış gözlemlenmiştir. Veriler blockwise regresyon analizine tabii tutulmuşlardır. Başarı son test puanları bağımlı değişken olarak regresyon analizi gerçekleştirildiğinde; öğrencilerin başarılarına uygulama ve öğrencilerin ön bilgilerinin etkili olduğu fakat tutumlarının etkisi olmadığı görülmektedir. Bilişim teknolojilerin destekli sosyal bilgiler eğitiminin sosyal bilgiler dersine ve teknolojiye karşı öğrenci tutumlarını etkilemediği görülmektedir. Öğretmenlerin sosyal bilgiler dersinde öğrenci başarılarını artırmak için teknolojiden yararlanabilecekleri sonucu çıkmaktadır.

***Anahtar Kelimeler*:** Sosyal bilgiler, BİT, başarı, tutum

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