

Evaluation of Fatih Project in the Frame of Digital Divide

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ABSTRACT

The aim of this research realized at the general survey model is to evaluate “FATİH Project” in the frame of digital divide by determining the effects of the distributed tablets to the students being educated at K12 schools on digital divide. Sample is taking from the 9th grade students in Sakarya city in the 2013-2014 academic session. The sample is determined according to purposive sampling method, and is formed of 301 students of two Anatolian High Schools and one Anatolian Teacher High School. They made use of tablet computers, whose opportunities scale they have benefited from (these have been developed by researcher as data collection instrument). After the data which was collected by the researchers has been classified; they were transferred to SPSS 17.00 in PC. The frequency distribution of the data was taken and t-test statistical procedure for matching groups was realized to compare the averages before and after the tablets have been distributed. According to the findings, it was established that FATİH Project increased the students’ level of ICT, and the usage and benefit from the opportunities that it present. It has also been established that FATİH Project has an important place in preventing digital divide.

Keywords: FATİH Project, Tablet Computer, Digital Divide.

INTRODUCTION

Rapid developments in information and communication technologies (ICTs) realized a change in economical and social life (Kotkin, 2000). This change presented the need for the individuals who knew the way of reaching knowledge and also knew the way of reaching information rapidly, to question the knowledge they have, and to use the technology in an effective way (Seferoglu and Akbiyik 2007). The societies with individuals having these features are named as developed countries which have strong economy.

The difference between the developed and developing countries on ICT increases (Ege, 2008), so, inequalities in ICT access and usage are being lived at different dimensions in the boundaries of a country (Ozturk, 2005), in a residential area (Yilmaz & Ersoy, 2012; Gudmundsdottir, 2010; Nicholas, 2003) even in different provinces of a city (Yilmaz and Ersoy, 2012).

Inequalities being experienced in ICT access and usage are stated as digital divide (Wei, Teo, Chan & Tan, 2011; Hohlfeld, Ritzhaupt, Barron & Kemker, 2008; Tien & Fu, 2008; Seferoglu, Avci and Kalayci, 2008, Aytun 2005; Norris, 2001; Ozcivelek et al, 2000). Digital divide is being defined as the “differences between individuals, household, institutions and different geographical regions at different socio-economic levels in the frame of access to ICT and internet usage opportunities” by OECD (2001). Campaine (2001) defines digital divide as the difference between the ones having the newest information technologies and the ones who do not have, Hargittai (2003) as the ones reaching digital technologies or not or the ones being able to use digital technologies or the ones who cannot, Salinas (2003) as inequalities between the ones who are able to use ICT and the ones who are not.

The internet in recent time has become of great importance in rapid information dissemination. Internet is seen as a miracle communication device which will provide an elimination of the inequality between people of the world and democratizing of public area of the world (Cheviron, 2006). DiMaggio, Hargitta, Neuman and Robinson (2001) state that it is required for us to be interested not only with inequalities at internet access but also with inequalities based on factors such as equipment, software and content of the connection, skill of using technology and the ones who are able to access internet. Onur (2007) does not think that it will be possible to decrease digital divide although some imbalances are eliminated by adding technology/computer literacy to the inequalities in the distribution of the technologies in the countries in case of not solving this issue. In short, skills of using information technologies in order to be successful and to access information by using these instruments in a knowledge based society is mostly important (Servon and Nelson, 2001). Because of this reason, it is

important for us to remove the inequalities in ICT access and usage (Gunduz, 2010). While the internet plays an important role in education (Iske, Klein and Kutscher, 2005), this subject gains a great importance in recent times, while the effects of ICT access and usage in the frame of digital divide have been questioned as education gains more importance.

Tablet computers in the latest ICTs are also accepted as individualistic computers. Although a tablet which has been developed by Elisha Gray in 1888 has been accepted as the Pioneer of first modern tablet, the entrance of reel tablets of nowadays in our lives has been realized in 1964. “Dynabook” has been produced which has been accepted as a portable computer for the children by Xerox Palo Alto Research Center and Alan Kay in 1972. Apple introduced to the market a tablet named: “Apple Graphics Tablet” which transfers the drawings made to the computer in 1979. Many tablets have been developed which have different operating systems since 1964, by Apple’s producing iPad in 2010, tablets produced by many firms became usable in recent times.

As the educational system cannot remain unresponsive to the developments in a period when ICT has been too effective (Pamuk, Cakir, Ergun, Yilmaz and Ayas, 2013), the importance of ICT has been understood in education in a short time as it has been in economical and social areas. Because of this reason, some countries projects started to be developed with the aim of using information and communication technologies, easy access to knowledge and opportunity for equality to make their students active and equipped in tomorrow’s changing world. Laptops and tablets were given to the students in the content of the projects. The first of these projects started firstly in Maine State in the United States of America in 2002. After Maine, laptops were given to the students in North Carolina in 2003, in New Hampshire, in Kentucky in 2004 and in Louisiana in 2007 (Pamuk and others, 2013) respectively.

The projects in which laptops and tablets have been given to the students in Portugal, Thailand, South Korea, Scotland, Singapore and France in addition to United States of America have been put into practice in the last ten years. It has been observed that as there are no adequate staff to make these tablets work efficiently and as there are no enough substructures, they could not be used effectively (Hongladarom, 2006). For this reason, technical support has been provided for the schools to carry out these projects in a successful way in United States of America (Barrios at al, 2004). In Turkey, FATIH project (Movement of Enhancing Opportunities and Improving Technology) which has been developed by Ministry of National Education has started to be applied since 2012.

FATIH (MOVEMENT OF ENHANCING OPPORTUNITIES AND IMPROVING TECHNOLOGY) PROJECT

FATIH Project with the aim of realizing IT supported education and providing information technologies to the classrooms at K12 schools by Ministry of Education in Turkey started in 17 cities and 52 schools from 2011-2012 academic session. FATIH Project is a project developed for the active usage of information technology instruments in courses in order to address more sensual organs in learning-teaching process with the aim of providing opportunity, equality and improved technology at schools. FATIH Project is composed of five main components (MEB, 2011):

1. Providing Equipment and Software Substructure
2. Providing Educational e-content and Management of e-content
3. Effective Usage of the ICT in Teaching Programs
4. In-service Training of the Teachers
5. Conscious, Reliable, Manageable and Measurable ICT Usage.

It is aimed at providing LCD panel interactive boards and internet substructure of 570.000 classrooms at K12 schools in Turkey, giving tablet computers to every teacher and student, giving in-service education to teachers and establishing e-content educational programs in the frame of these components. It can be told that the government’s financial policies changed to prevent digital gap and to provide equal opportunity in Turkey (Yildiz and Seferoglu, 2013). When the distribution of the investments on information and communication technologies in public has been examined, there were investments in the Ministry of National Education and universities as 46% in 2012, 45% in 2013, 44% in 2014. Education took the first place in investments. 803 million Turkish Liras (TL) in 2012, 1.4 billion TL in 2013 and 1.4 billion TL in 2014 have been separated from the general budget for FATIH Project. FATIH Project takes the first place as investment in the last three years. In the next years, it is stated that the share to be given in ICT from the general budget will increase (KB, 2012; KB, 2013; KB, 2014).

It can be said that there is not enough study on digital divide at k12 schools in Turkey (Yildiz and Seferoglu, 2014a). Yildiz and Seferoglu (2013) reached a conclusion that firstly, the students should be ICT literate to use

the tablets distributed in FATİH Project effectively and in the research in which they presented the role of education and information technology teachers in preventing numerical gap. In addition to this, they are determined that effective, conscious technology usage should be supported by computer technology teachers to prevent the damages born out of intensive and false technology usage by students. Also, they stated that in-service education should be given to the teachers in order to increase their research. Yildiz and Seferoglu (2014) determined that two third of the participants did not have ICT access, ICT access of females have been lower than those of the males, the lowest ICT literate has been in South East Region of Turkey, the highest ratio has been in Mediterranean Region according to socio-economic and cultural background features of the students in their second study in which they examined numerical gap levels of elementary school students according to different variables.

Yilmaz and Ersoy (2012) examined digital divide in the frame of several variables between fifth grade students in Diyarbakir city. They determined to see that there would be differences even between central provinces on ICT access and usage situations. Also, they reached the result that the elementary school students used ICT mostly with the aim of education. Gunduz (2010) examined digital divide at elementary schools in Turkey. Gunduz determined that few families with low socio-economic level had computers at their homes, the ones whose socio-economic level was high also had computers at their homes. He reached the same result about internet access at daytime. Gunduz and Hamedoglu (2003) also reached the same results they made on high school students. Asici and Usluel (2013) examined the numerical gap according to demographic features of university students and determined that female students used ICT more with the aim of academic studies than male students. Pamuk at al. (2013) reached the result stating that limitations at tablet and internet usage and not giving enough technical support created several problems in their study in which they evaluated FATİH Project with teacher and student point of view. Also, Gulpinar, Kuzu, Dursun, Kurt and Gultekin (2013) evaluated FATİH Project with the point of view of parents and were determined that the parents assessed the project positively and supported it but they had critics on timing.

Three indicators on digital divide are claimed as (1) access, (2) usage and (3) ICT literate (Yildiz and Seferoglu, 2013; Hohlfed, Ritzhaupt, Baron, Kemker, 2008; Tein and Fu, 2008; Geray, 2003; OECD, 2001). (1) access as the individuals' access to software, equipment, internet and technology support (Hohlfed, Ritzhaupt, Baron, Kemker, 2008); (2) usage as individuals' having ICT knowledge and skills (Solomon, Allen and Resta, 2003); (3), ICT literate as individuals' skills of looking for, processing, selecting information and skill of knowing which resource to apply (Van Dijk and Hacker, 2003) means in a large perspective. Three indicators which have been accepted by the authorities are taken as "access=level of owning", "Usage=usage level", "ICT literate=level of benefiting from the opportunities of ICT" presents".

THE AIM OF THE STUDY

The aim of this paper is to evaluate FATİH Project in the frame of digital divide by presenting the effects of tablet computers distributed in the content of FATİH Project by Turkish Ministry of Education on digital divide. Answers to sub-problems below will be looked into in order to reach this aim:

1. What are the ICTs which the students have?
2. After the tablet computers had been given to the students by the government, did the level of using tablet computers by the students show a change?
3. After the tablet computers has been given to the students by the government, did the level of benefit from the opportunities which the tablet computer present shows a change?

LIMITATIONS

This study is limited to the students of high schools in Sakarya city of Turkey in the 2013-2014 academic session. Also, the research is limited to the use of tablet computers and the internet from all ICTs.

METHODOLOGY

1. MODEL, POPULATION AND SAMPLE OF THE STUDY

The research has been realized in general survey model taking place in survey models. The sample is taken from the 9th grade of high school students in Sakarya city in the 2013-2014 academic session. The sample of the research has been determined according to purposive sampling method. According to this sampling method, three high schools which were- two Anatolians and one Anatolian Teacher High School in which tablet computers were given to the students in the content of FATİH Project in Sakarya city in 2013-2014 academic session have been included. The students in four classrooms of (A, B, C, D) of the 9th grade have been taken as sample at each of those school. And an average of 30 students have been taken from each classroom, making it a total of 120 students from the first Anatolian High School, 120 students from the second Anatolian High School and 120 students from the Anatolian Teacher High School, amounting to a total of 360 students in all.

2. DATA COLLECTION INSTRUMENTS

“Using and benefiting from tablet computers scale” which is developed by the researcher as data collection instrument was used. 24 questions which have been prepared according to five Likert related to determining the level of using and benefiting from tablet computers took place in the scale. The scoring of answers taking place in the scale is as “never=1” point, “Rarely=2” points, “partially=3” points, “Largely=4” points, “Completely=5” points. “1.00-1.79” for never, “1.80-2.59” for rarely, “2.60-3.39” for particularly, “3.40-4.19” for largely and “4.20-5.00” for completely. Score gaps were taken into account while determining arithmetical averages of these scores. At the result of reliability study realized for “24” questions, “Cronbach’s Alpha” value was determined as “0.975”.

KMO Sampling measurement competence value	0,964
Barlett Test Approximate Ki-Square value	17642,267 sd=276, p=0,000

As seen in Table 1, at the result of the validity test study, sampling measurement competence value (KMO) of the questionnaire has been determined as “0.964”. As this value has been above “0.70”, it is accepted that sampling number is sufficient. Also, Barlett’s Test result has been given as “p=0.00<0.05”. This shows that there is a meaningful difference between sample number and item number in the scale. The scale explains 72.159% of the feature which the researcher wants to measure. It has been determined that the load values of every item in the scale have been in “0.642-0.855” gap. The scale has been formed from two scales. The first factor is “Level of using tablet”, the second factor is the “Level of benefiting from the opportunities which the tablets present”. Also, questions related to demographical features of the individuals and their situations of having ICT at the beginning of the scale.

3. COLLECTION OF THE DATA

After the legal permissions have been taken, the scales were distributed before the tablet computers in the content of the FATİH project were distributed. Then, required explanations made for the school headmasters and ICT teachers at the schools taking place in the sample. The students filled in these scales which could be accepted as pretest before taking the tablet computers. Therefore, data related to having ICT skills, using tablet computers and level of benefiting from the opportunities the tablets present have been taken from the students before the tablets were delivered to them. Later, the Ministry of National education waited for the distribution of the tablets in the content of the project. After tablets have been given to three schools, the scale was applied to the classrooms again in the last month of the 2013-2014 academic sessions. In other words, the same scales were applied to the students before and after the tablets have been distributed.

4. DATA ANALYSIS

The scales were examined one after the other after they have been collected and classified, and it was established that a total of 325 scales returned back when the scales collected before the tablet computers have been examined, and a total of 330 scales returned back when the scales collected after the tablet computers have been examined. When the scales have been examined in detail, some of them were out of content and data taken from a total of 301 scales were transferred to SPSS 17.00 computer program. Firstly, the frequency distribution of demographical features of the students and their ICT situation has been calculated. Paired-Samples T test was used with the aim of determining whether there is any change before and after the distribution of tablet computers. This procedure has been realized separately for “using tablet computers” and “benefiting from the opportunities the tablet computer presents” with every scale item. “p<0.05” condition is looked for to determine whether there is a meaningful difference between the averages.

FINDINGS

Findings according to the statistical procedures realized from the data taken from 301 9th grade students that are being educated at 3 different schools in the sample took place in this section. Firstly, demographical features of the students taking place in the sample are seen in Table 2.

Table 2. Demographical features of sample

Variables	N	%	Variables	N	%		
Gender	Female	178	59,1	Anatolian High School	204	67,8	
	Male	121	40,2	School type	Anatolian Teacher High School	97	32,2
	Missing	2	,7	Missing	0	0,00	

Father's educational level	Total	301	100,0	Mother's educational level	Total	301	100,0
	Elementary school	45	15,0		Elementary school	114	37,9
	High school	148	49,2		High school	137	45,5
	University	105	34,9		University	43	14,3
	Missing	3	1,0		Missing	7	2,3
Student's average grade	Total	301	100,0	Total	301	100,0	
	Lower than 70	41	13,6	Lower than 1000 TL	19	6,3	
	Between 70-85	137	45,5	Between 1000-3000 TL	164	54,5	
	Above 85	45	15,0	Between 3000-5000 TL	73	24,3	
	Missing	78	25,9	More than 5000 TL	30	10,0	
	Total	301	100,0	Missing	15	5,0	
				Total	301	100,0	

When Table 2 is examined, it would be observed that 2 (0.7%) students from 301 students did not state their gender, 179 (59.1%) of the students are female, 121 (40.2%) of the students are male from the ones who stated their gender. 97 (32.2%) of the students are at Anatolian Teacher High School, 204 (67.8%) of them are at Anatolian High School. Grade point average of 41 (13,6%) students are below 70, 137 of them (45.5%) are between 70-85, 45 (15.0%) of them have grade point average above 85. 78(25.9%) of the students did not give information about their grade point average. Fathers of 45 (15.0%) students are graduated from elementary school, 148 (49.2%) of them from high school and 105 (34.9%) of them from university. While mothers' educational level has been examined, 114 (%37.9) of them are graduated from elementary school, 137(54.5%) of them from high school and 43 (14.3%) of them from university. 3 (1.0%) of the students did not give information about their father's educational level, 7 (2.3%) of them did not give information about their mother's educational level. When incomes of the families have been examined, monthly income of 19 (6.3%) students were lower 1000 TL, 164 (54.5%) of them have been between 1000-3000 TL, 73 (24.3%) of them have been between 3000-5000 TL. Monthly income of 15 (5.0%) of students are unknown, on the other hand 30 (10.0%) of the students income have been above 5000 TL.

1. FINDINGS RELATED TO THE SUB PROBLEM OF: "WHAT ARE THE ICTS THE STUDENTS HAVE?"

Table 3. ICTs the students have the ones they are able to use

Variables		N	%	Variables		N	%
How many computers are there at your home?	None	10	3,3	Is there a portable computer at home?	No	120	39,9
	1	149	49,5		Yes	179	59,5
	2	84	27,9		Missing	2	,7
	3 and more	56	18,6		Total	301	100,0
Is there a laptop at home?	No	99	32,9	Is there a computer for everyone at home?	No	250	83,1
	Yes	199	66,1		Yes	43	14,3
	Missing	3	1,0		Missing	8	2,7
	Total	301	100,0		Total	301	100,0
Is there internet connection at home?	No	33	11,0	Is internet connection unlimited at home ?	No	63	20,9
	Yes	266	88,4		Yes	234	77,7
	Missing	2	,7		Missing	4	1,3
	Total	301	100,0		Total	301	100,0
Is your phone	No	59	19,6	Can you connect to	No	27	9,0

smart phone ?	Yes	239	79,4	internet from your mobile phone?	Yes	266	88,4
	Missing	3	1,0		Missing	8	2,7
	Total	301	100,0		Total	301	100,0
Do you have tablet computer? (Before)	No	240	79,7	Can you connect to internet by your computer and mobile phone?	No	108	35,9
	Yes	55	18,3		Yes	175	58,1
	Missing	6	2,0		Missing	18	6,0
Do you have tablet computer? (Later)	Total	301	100,0	Total	301	100,0	
	No	0	0,00	No	212	70,4	
	Yes	298	99,0	Yes	73	24,3	
Do you have tablet computer? (Later)	Missing	3	1,0	Can you connect to internet from your school?	Missing	16	5,3
	Total	301	100,0	Total	301	100,0	

When Table 3 is examined, it would be observed that 3.3% of 9th grade students did not have computers at home. The rate of the students who have only one computer at home is 49.5%, two computers 27.9%, three and more is 18.6%. Whereas 32.9% of the students have desktop computers 66.1% of them did not have. Whereas 39.9% of them had laptops in their houses, 59.5% did not have. The rate of students who have individualistic computers belonging to every family member is 14.3%. Whereas there was no internet connection in 11.0% of the homes, 88.4% of them had internet connection. Unlimited internet connection is existent at 77.7% of homes. 79.4% of student mobile phones are smart phones. 1.0% of the students did not give information on this subject 19.6% of the mobile phones are not smart phones. 88.4% of the students are able to connect to the internet from their phones. Whereas, 18.3% of the students have tablet computers before tablets have been given to the students in the frame of FATİH project, all of them had tablet computers later. 58.1% of the students are able to connect to the internet with their mobile phones and with computers. 70.4% of the students claim that they are not able to connect to internet from their schools, 24.3% state that they are able to connect to internet.

2. AFTER TABLET COMPUTERS HAVE BEEN GIVEN TO THE STUDENTS BY THE GOVERNMENT, IS THERE A CHANGE FOR THE STUDENTS AT THE LEVEL OF USING TABLET COMPUTERS?

When Table 4 is examined, it would be observed that there is a meaningful difference at the level of “ $p < 0.05$ ” between the period before and after the tablets have been given to the students in all items taking place at the dimension of students being able to use tablet computers.

Table 4. T-Test related to the level of being able to use tablet

Variables		\bar{X}	N	Sd	t	df	p
I know how to protect information in tablet	Before	3,486	294	1,369	-7,179	293	0,00
	After	3,973	294	1,150			
I know transferring the information in the tablet	Before	3,503	292	1,328	-6,782	291	0,00
	After	3,949	292	1,141			
I can use Word program in tablet	Before	2,918	293	1,474	-4,600	292	0,00
	After	3,481	293	2,198			
I can use Excel program in tablet	Before	2,799	294	1,470	7,656	293	0,00
	After	3,293	294	1,453			
I can use PowerPoint program in tablet	Before	3,000	291	1,476	-7,367	290	0,00
	After	3,495	291	1,463			
I can load any program in the tablet	Before	3,737	289	1,299	-6,978	288	0,00
	After	4,246	289	1,033			
I know removing any program from the tablet	Before	3,746	287	1,323	-7,781	286	0,00
	After	4,258	287	1,076			
I can format and reset the tablet	Before	2,906	287	1,503	-6,159	286	0,00

	After	3,289	287	1,520			
I can use my tablet with all its features.	Before	3,399	291	1,215	-6,592	290	0,00
	After	3,869	291	1,062			
I can always connect to internet from tablet	Before	3,378	291	1,365	-6,662	290	0,00
	After	3,866	291	1,177			
I know downloading and protecting the information from internet.	Before	3,613	289	1,281	-6,810	288	0,00
	After	4,076	289	1,093			
I can have information about anything on internet from tablet.	Before	3,495	291	1,388	-7,407	290	0,00
	After	4,010	291	1,170			
I can use tablet comfortably whenever I need.	Before	3,410	290	1,453	-5,403	289	0,00
	After	3,838	290	1,307			
Level of using tablet	Before	3,341	267	1,100	-3,094	266	0,02
	After	3,527	267	,840			

According to paired-Samples T-test results before and after the tablets have been given to the students, it was observed that there is a meaningful difference at “ $p < 0.05$ ” level as “ $t = 3.094$ ” and “ $p = 0.02$ ” have been at level of using tablet. When the data taken from 267 students were examined in Table 3, whereas average related to before the tablets have been given to the students has been “ $\bar{X} = 3.34$ ”, average related to after the tablets have been given to the students has been “ $\bar{X} = 3.53$ ”. Especially, when the collection of the data in a month after the tablets have been given to the students has been thought about, it was discovered that there is an increase in the usage skill of tablet computers distributed in the frame of FATIİH Project.

3. FINDINGS RELATED TO THE SUB PROBLEM OF: “AFTER TABLET COMPUTERS HAVE BEEN GIVEN TO THE STUDENTS BY THE GOVERNMENT, IS THERE A CHANGE FOR THE STUDENTS AT THE LEVEL OF BENEFITING FROM THE OPPORTUNITIES THAT THE TABLET COMPUTERS PRESENT?”

Table 5. T Test related to level of benefiting from the tablet

Variables		\bar{X}	N	Sd	t	df	p
I can use tablet with the aim of studying lesson(curriculum, etc)	Before	2,894	292	1,323	-9,088	291	0,00
	After	3,596	292	1,193			
I can use tablet with the aim of protecting information.	Before	2,906	288	1,347	-8,070	287	0,00
	After	3,500	288	1,285			
I can use tablet for more than one course	Before	2,816	288	1,350	-9,382	287	0,00
	After	3,580	288	1,344			
I can use tablet with the aim of entertaining (playing games, music,etc)	Before	3,275	291	1,354	4,899	290	0,00
	After	3,653	291	1,262			
I can use tablet to follow the news (newspaper,etc)	Before	2,739	287	1,378	-5,913	286	0,00
	After	3,153	287	1,440			
I can use tablet with the aim of information (mail, chat vb)	Before	2,879	289	1,420	4,271	288	0,00
	After	3,218	289	1,499			
I can use tablet to follow social media (face. Etc)	Before	3,038	291	1,439	-2,968	290	0,03
	After	3,275	291	1,499			
I can use tablet with the aim of taking course from internet	Before	2,413	288	1,374	-5,358	287	0,00
	After	2,813	288	1,498			
I can use tablet with the aim of making research (doing homework,etc)	Before	3,021	290	1,326	-6,470	289	0,00
	After	3,528	290	1,289			
I can use tablet with the aim of shopping from internet	Before	2,388	291	1,442	-3,179	290	0,02
	After	2,608	291	1,568			
I can use tablet with the aim of following	Before	2,281	292	1,403	-5,235	291	0,00

announcements	After	2,630	292	1,601			
Level of benefiting from the tablet	Before	2,776	260	1,018			
	After	2,944	260	,914	-2,964	259	0,03
General	Before	3,065	294	,974			
	After	3,518	294	,852	-8,362	293	0,00

T-test results before and after the tablet computers have been given to the students related to benefiting from the opportunities they present has been given in Table 5. According to the table, it has been observed that there is a meaningful difference at “ $p < 0.05$ ” level before and after the tablet computers have been given ($t = 2.964$ and $p = 0.03$). When averages were examined, the averages related to benefiting from the opportunities they present has been “2.776” before they have been given, it increased to “2.944” after they have been given. Although the latter average has been at middle level, when it is thought that the distribution of the tablets have been realized recently, it is assumed that this average will increase.

Also, when Table 5 is examined, it was discovered that there is a meaningful difference at “ $p < 0.05$ ” level between the statements measuring the dimension of benefiting from the tablets before and after the distribution. When averages related to every item have been examined, it is observed that the highest increase has been in items “I can use the tablet in more than one course.” And “I can use the tablet with the aim of studying lesson.” The lowest increase has been determined in the items of “I use tablet to follow social media.” and “I can use tablet with the aim of following announcements”. On the other hand, it has been determined that the students used the tablet computers for following the announcements from internet” and “making shopping” before they took the tablet computers. The fewest usage of tablet has been on taking courses. These three items have been the least benefiting areas. It has been discovered that there is a meaningful difference at “ $p < 0.05$ ” level before and after the tablet computers have been given in relations to the generality of the scale ($t = 8.362$ and $p = 0.00$). Whereas the average students before the tablets have been given have been as “3.065,” the average after they have been given has been as “3.520”. It was discovered that there is approximately “0.45” scores increase and this is an advantage for FATIH project.

RESULTS AND DISCUSSION

FATIH project started in 17 cities as a pilot application with the aim of realizing ICT supported teachings by providing ICT to the classrooms for k12 schools in Turkey in 2011-2012 academic sessions. Tablet computers were given to 9th grade students of some high schools in the content of the project in 2013-2014 academic sessions in Sakarya city. The results taken in this research in which tablet computers distributed in the content of FATIH Project have been evaluated in the frame of digital divide on 301 students being educated at 9th grade and the discussions made relates to these results which have been given below:

Whereas 3.3% of the students did not have computers at their homes, nearly half of 301 students have only one computer at home. Yildiz and Seferoglu (2014) determined that only one third of the students have computer and internet access at home in their researches and there has been a gap between the ones who have access and the ones who did not have. However, in our research, before the tablets have been given to the students only 18.3% of students had tablet computers, this rate increased to 100% with FATIH project. As tablet computers given in the content of FATIH Project increased, the number of computers at students’ homes, the level of families having ICT also increased. Moreover, there are no more houses which do not have computer with the distribution of tablet computers. This result is an indicator that FATIH Project had an important role to play in preventing the inequalities related to accessing ICT in the frame of digital divide of other family members in addition to that of students.

On the other hand, whereas all of the students had access to ICT by giving them tablet computers, internet access which is seen as a miracle communication device in reaching information (Chevion, 2006) has not been sufficient in the frame of FATIH Project according to the results. Because it has been determined in the research that 70% of the students cannot connect to internet from their schools. It is an important rate that 88% of the students are able to connect to internet from their houses, 58% of them from their mobile phones by computers and 88% of them only from their mobile phones. In fact, these rates changed differences with Gunduz’s (2010) findings before the tablet computers have been given; they matched with his findings after the tablet computers have been given. Because Gunduz reached the result that students’ access to the internet has been lower than the access to computer in his research. But, it should not be forgotten that the inability of the students to connect to the internet from school which has an important role in education (Iske, Klein and Kutscher, 2005) will prevent the realization of the aims of the FATIH project.

There has been a meaningful difference in all items at the dimension of students' usage of the tablet computers in the content of FATİH Project before and after the tablets have been given to the students. In other words, when the level of use of the tablet computers has been compared before and after the tablets were given to the students, there has been a meaningful increase. This result supports the ideas of Kurt, Colak and Yildirim (2008) who mentioned that owning a computer plays an important role in the development of technology usage of individuals. When a generalization has been made, it can be said that FATİH Project increased the level of using technology in addition to owning this technology.

It was established that there is a positive increase at the level of students benefiting from the tablets before and after the tablets have been given to them. From this perspective, the highest increase was realized from the usage with the aim of using tablet computers in the courses and studying lessons after the tablets have been given to the students. The lowest increase was realized from the usage of tablets with the aim of following social media and announcements. Also, it has been established as a result that the students benefited mostly from the tablet computers with the aim of entertainment, studying lesson, making research from the internet, using it for more than one course and for keeping information. When it is taken into account that ICT usage increased learning level of the students (Coppock, Smith and Howell, 2009), these results taken in this research can be evaluated as the indicator of increase at learning levels of the students. In addition to these, as Pamuk and others (2013) stated, when teachers used this technology actively in their courses, more increase will be realized in their learning. But, using the tablets with the aim of entertainment mostly can bring some problems as it has been in the usage of mobile phones (Karabacak and Oztunc, 2014). It has been determined that the least benefiting area of the tablets before and after they were given to the students have been following the announcements from internet, making shopping and taking course.

As a result, it has been observed that there is a meaningful difference in positive direction before and after the tablets were given to the students at dimensions and items base in general scale in this research. While this result presents the importance of FATİH Project in preventing digital divide, the result that it has been effective in creating equal opportunity has been reached. When taken from another point of view, poverty is one of the most important reasons of digital divide (Wolf and Kinnon, 2002; Ege, 2008; Eamon, 2004, Liu and San, 2006). But, digital divide is not only related with poverty but also with differences between geographical regions (Yildiz and Seferoglu, 2014a; Ege, 2008; Kezang and Whalley, 2007; Liu and San, 2006; Hess and Leal, 2001), age (Yildiz and Seferoglu, 2014a; Sen and Akdeniz, 2012; Ege, 2008; Atkinson, Black and Curtis, 2008), gender (Sen and Akdeniz, 2012; Yang and Chen, 2010; Ege, 2008; Kilic and Yildirim, 2008; Jackson at al., 2008; Deryakulu, 2007), educational situation (Sen and Akdeniz, 2012) the language used (Liu and San, 2006; Souter, 2007), ethnical origin (Chakraborty and Bomsan, 2005; Clark and Gorski, 2001; Eamon, 2004; White, 2008), the country being lived (Kalayci, 2013; Kilic, 2011; Guillén and Suárez, 2005; Liu and San, 2006; Underwood, 2007; Sen and Akdeniz, 2012;) and residence place (Yılmaz and Ersoy, 2012; Gudmundsdottir, 2010; Nicholas, 2003) individualistic disabling situation (Atkinson, Black and Curtis, 2008), level of benefiting from education (Pick and Azari, 2008), demographical situation of the family (Yılmaz and Ersoy, 2012; Jackson at al., 2008; Ersoy, 2011; Asici and Usluel, 2013; Ono and Zavodny 2007; Kuzu at al., 2008; Kurt, Çoklar, Kiliçer & Yildirim 2008; Ozmusul, 2008) motivation and knowledge deficiencies (Aerschot and Rodousakis, 2008), socio-economic level (Gunduz, 2010; Hohlfeld at al., 2008). None of these variables has not been taken into account while distributing tablet computers in the content of FATİH Project in 2013-2014 academic sessions. Also, tablet computers in the content of FATİH Project only form one part of the project. When it is taken into account that the data used at reaching the results in this research have been collected after a month that the tablet computers have been distributed, it shows that FATİH Project will have an important role in creating equal opportunity and preventing digital divide. For this reason, the result is that the subject of accessing the internet in Turkey should be extended all around the country.

RECOMMENDATIONS

It can be stated that increasing the level of tablet usage and benefiting from the opportunities it presents for the students who use these tablets for meaningful purposes make the application of FATİH Project an obligation in the frame of preventing digital divide. Not only the budget of the government should be used to put this application into practice, but also all civil societies should give moral and financial support. 100% of students have been provided to have a computer by giving them tablet computers in their various schools. At the same time, 100% of students in schools should be provided access to the internet. Having internet access in schools by the students will save poor families from the cost of internet connection services at home (Ege, 2008). Moreover, as these families cannot meet these costs at their homes, there will be gaps between the students in the same classes.

When it is thought that internet has been used mostly to reach knowledge (Orhan and Akkoyunlu, 2004) and more research is being made while using the internet (Ersoy and Turkkan, 2009), access to internet should be seen as an obligation so that the students will benefit from the opportunities that it presents, by providing their usage with all its features as an instrument for reaching knowledge. Also, it should not be forgotten that accessing the internet easily at schools will increase the level of using ICT and benefiting from the opportunities that it presents. In short, digital divide will be prevented. If our request does not increase the gap between the countries, while developed countries are developing some more, everybody should do whatever is needed to prevent the digital divide.

Data was collected in this research the following month after the tablets have been distributed. For this reason, a research on this subject can be carried out again after a period of time. Therefore, after the first students have completed their usage, their tablet usage levels could be tested. In recent times, mobile phones as the latest ICTs have been in the agenda of a lot of researchers, and for this reason, similar study could be organized on mobile phones. Also, FATİH Project is being realized only at k12 schools, but most of the population of the Turkey schools has been above 18 years old. This has given an edge to researches and has also given an important solution to their proposals because with the involvement of such age grade case studies can be easily realized by university students or adults.

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