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Examining Student Perceptions Regarding to Usage Purposes of Tablet Computers Distributed Under the Scope of in FATIH Project in the Course Processes and by Students

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Abstract

In this study, it is aimed to determine student perceptions regarding students' purposes of tablet computer usage and how tablet computers are used during learning process, which were given to students within the scope of FATIH Project. In this study, it was used a mixed method using a combination of quantitative and qualitative research methods. The study group consisted from the 10th and 11th grade students of two Anatolian High School in Ankara and Çorum in 2015-2016 academic year. 58 students joined from different grade levels to this study. The data were collected through the "Tablet Usage Survey". According to the findings of the study, when students' purposes of tablet computer usage are analyzed, students mostly use tablet computers for listening to music, making research for homework, playing game and watching video. The most important problem encountered while using tablet computers in the classroom and coming into prominence in student perceptions is the opinion regarding that they affect attention of the students negatively. It is determined that other important problems encountered while using tablet computers result from infrastructure problem, charge problem and technical problems. According to perceptions of the participants, it is understood that using tablet computers during teaching learning process provides advantages in terms of easy access and speed during the lessons.

Key words:Tablet PC, FATIH project; technology integration; access to technology

Problem

Nowadays access to technology has become common in daily life. That's why, technology integration to teaching-learning environment has also become not an option but a necessity. There are many factors that affect technology integration in teaching-learning environment. Some of these factors are teacher attitude, technological literacy level of the teacher, learning environment, technical support and need for guidance and access to

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technology. Access to technology mentioned herein is an important factor. However, easy access to technology does not guarantee effective technology integration for learning process. Considering this perspective, the focus of this study is determining students' purposes of tablet computer usage and how tablet computers are used during learning process, which were given to students within the scope of FATIH Project.

Access to technology is emphasized in the literature often as one of the obstacles to technology integration studies (Leggett & Persichitte, 1998; Lan, 2000; Pelgrum, 2001; Bingimlas, 2009). Ertmer (1999) sees access to technology among primary obstacles in "obstacles to effective technology integration" classification which he divided into two groups. Primary obstacles mentioned herein are related to time, support, sources and teaching besides teacher factor. Secondary obstacles depend on the teacher's attitude and belief towards technology integration, resistance to change and applications that s/he performs. When obstacles in these two groups are analyzed, policies regarding technology integration focus on access to technology which is among the primary obstacles (Kleiman, 2000; Earle, 2002; Ertmer, 2005; Lawless, & Pellegrino, 2007). Within this scope, in various countries, various studies are conducted on a large scale aiming bringing teaching-learning environment and information and communications technologies (ICT) together or enriching teaching-learning environment with information and communications technologies (ICT) (Pamuk, Çakır, Ergun, Yılmaz and Ayas, 2013). Perhaps one of the most extensive projects among these projects is FATIH Project which is carried out in our country.

With the FATIH Project, by year 2016, 432.288 interactive boards were installed (Ministry of Education, 2016a) and 1.437.800 tablet computers were given to teachers and students (Ministry of Education, 2016b). It cannot be denied that there is an extensive improvement on access to technology for teachers and students primarily at secondary schools.

It is possible to find many studies in the literature regarding effects of using tablet computers and interactive boards during the lessons which were given within the scope of FATIH Project. When the studies conducted on tablet computers usage during the lesson are examined, it can be clearly seen that these studies become more common with the FATIH Project and in these studies it has been focused on teacher-student attitudes and opinions towards using tablet computers during the lesson, effects of tablet computers on educational outputs and benefits of using tablet computers (Akbay and Küçük, 2013; Batur, Güleren&Balci, 2013; Kenar, Balci&Gökulp, 2013; Kirali, 2013; Çetinkaya&Keser, 2014; Tekerek, Altan&Gündüz, 2013; Dündar&Akçayır, 2014; Öner&Kirkbeş, 2016). Despite that, there are very limited studies on students' purposes of tablet computer usage and use of tablet computers during the lesson (Altın&Kalelioğlu, 2015; Eren, 2015).

Within this scope, determining how tablet computers given to high school students within the scope of FATIH Project are used during learning process and students' purposes of tablet computer usage is the aim of this study.

Importance of Research

Equipping education area with technological equipment creates opportunity for technology usage and integration during lesson. In line with this purpose, within the scope of FATIH Project started to be carried out in 2012, interactive boards are started to be installed



to the classrooms and tablet computers are started to be given to the students. This study can present a perspective regarding students' purposes for using tablet computers given for educational purposes and how they are used during the lessons.

Research Objectives

In this study, it is aimed to determine student perceptions regarding students' purposes of tablet computer usage and how tablet computers are used during learning process, which were given to students within the scope of FATIH Project. Within in the scope of this aim, research questions below are determined:

- What are student perceptions regarding students' purposes of tablet computer usage and purposes of tablet computer usage during the lessons?
- Considering advantages and disadvantages of using tablet computers for teaching-learning activities, are tablet computers seen as a necessary item for lessons?

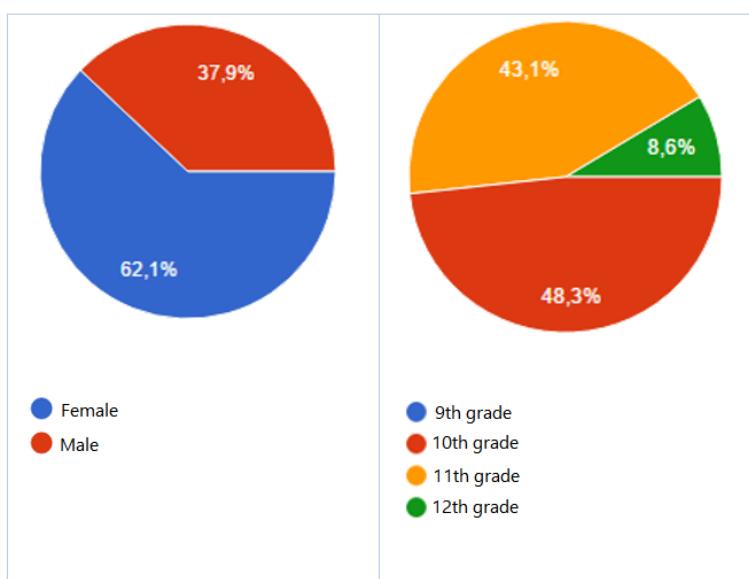
Method

In this study, qualitative and quantitative research methods are used together as a combined method. While content analysis method is used in qualitative part of the research, in quantitative part defining statistics such as percentage and frequency are used.

Study Group

Study group consist of students of two Anatolian High Schools in Ankara and Çorum during 2015-2016 school year. 58 volunteer students participated in the study from different grades. Distribution of demographic characteristics of the participants is presented in Figure 1.

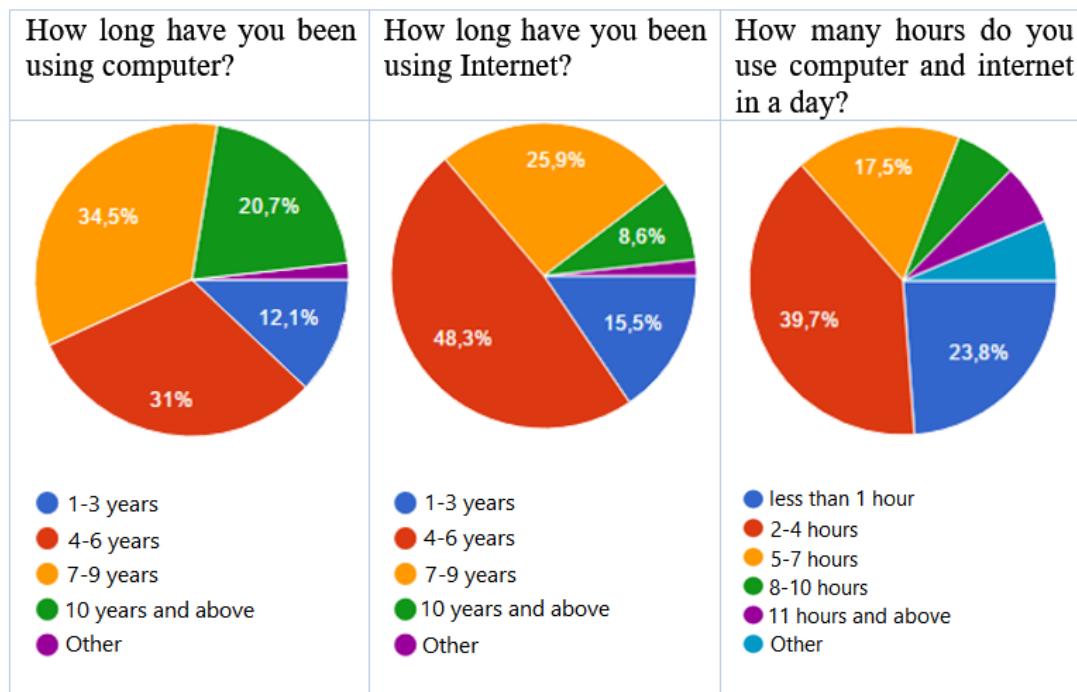
Figure 1. Distribution of Demographic Characteristics of the Students



According to Figure 1, 62.1% of the participants are female students and 37.9% are male students. When the distribution is examined in terms of their grades, tenth grade students have the highest participation percentage (48.3%). The reason why ninth grade students did not participate in the study is tablet computers were not given to the ninth-grade students in the schools where the study was conducted.

Distribution of the students in the study group regarding their computer and internet usage is presented in Figure 2:

Figure 2.Distribution Regarding Computer and Internet Usage



When Figure 2 is analyzed, it is found out that 34.5% of participants in the study group have been using computer for 7-9 years, 31% have been using it for 4-6 years, 20.7% have been using it for 10 years and above and 12.1% have been using it for 1-3 years. When it is considered in terms of internet usage, it is seen that 48.3% of participants have been using internet for 4-6 years, 25.9% have been using it for 7-9 years, 15.5% have been using it for 1-3 years and 8.6% have been using it for 10 years and above.

According to Figure 2, when daily computer and internet usage time of participants are analyzed, it is understood that 39.7% of them spend 2-4 hours, 23.8% spend less than 1 hour and 17.5% spend 5-7 hours in front of computer and on internet.

Data Collection Tools

Within the scope of this research, data were collected via "tablet computer usage survey". Tablet computer usage survey consists of three parts. In the first part, there is information related to demographic characteristics and access to technology. In the second part, there are articles related to purposes of tablet computer usage during and out of the

lesson. In the last part of the survey, there are open ended questions to define student opinions about using tablet computers during the lesson. Survey is applied to students online and paper based.

Data Analysis

Explanatory data analysis method was used in this study. Defining statistics were used in the quantitative part of the research. In the qualitative part, descriptive analysis method was used to explain the findings in the quantitative part deeply.

Findings

In this part of the study, when students and teachers' purposes of tablet computer usage and advantages and disadvantages of tablet computers are considered, findings obtained to determine whether students find tablet computers necessary or not for lessons are presented.

What are student perceptions regarding students' purposes of tablet computer usage and purposes of tablet computer usage during the lessons?

It was asked to participant students why they used tablet computers and answers of the students are given on Table 1.

Table 1. Students' Purposes of Tablet PC Usage

Articles	f	%
Listening to Music	35	60.3
Making research for homework	31	53.4
Playing game	28	48.3
Watching video	27	46.6
Surfing on Social Media	23	39.7
Using/Trying Different Internet Applications	21	36.2
Checking News	18	31
Reading E-book (story, novel, etc.)	17	29.3
Using Educational Web-sites	13	22.4
Solving test	13	22.4
Sending e-mail	6	10.3
Online shopping	6	10.3

When Table 1 is examined, it is understood that students mostly use tablet computers for listening to music (60.3%), making research for homework (%53.4), playing game (%48.3), watching video (%46.6) and surfing on social media (%39.7).

According to Table 1, students also use tablet computers for some educational purposes. These are making research for homework (%53.4), reading e-book (story, novel etc.) (%29.3), using educational web-sites (%22.4) and solving test (%22.4).

After defining learners' purposes for using tablet computer, question related to tablet computer usage during the lessons is asked and distribution of learner perceptions regarding this issue is presented on Table 2.

Table 2. Purposes of Tablet PC Usage during the Lessons

Articles	f	%
We do not use tablet computers during the lessons	48	83.8
Accessing Education Informatics Network (EIN) contents	10	17.2
Watching educational videos and animations	9	15.5
Following E-books ¹ (enriched books)	7	12.1
Taking notes	5	8.6
Visiting educational web-sites on the internet	5	8.6
Making research for homework	5	8.6
Highlighting important points in the course book	4	6.9

For the question regarding purposes of tablet computer usage during the lessons, 83.8% of the participants stated that they did not use tablet computers during the lessons (See Table 2 above). When the purposes of tablet computer usage during the lessons are analyzed, it is found out that they are mostly used for accessing EIN contents (%17.2), watching educational videos and animations (15.5) and following E-books (enriched books) (%12.1) (See Table 2 above).

According to student perceptions, reasons for not using tablet computers during the lessons are classroom management problems, teacher's losing control in the classroom and negative teacher attitude due to this. Some student opinions regarding this issue are below:

“Our teachers do not lean toward this issue [S40].”

“We used them for a while when they were first given 2 years ago, but then everyone stopped using because students got out of control [S48].”

“At first some of our teachers tried to use, but it did not work [S44].”

Some student opinions regarding that tablet computers are used in some lessons at least on a limited level are below:

“Yes, we use them during Turkish Literature lesson [S51].”

“We do not use them except for one or two lessons. I think using tablet computers does not become successful [S42].”

“We do not use them, but the lesson would become more effective if we use tablet computers [S47].”

After determining student perceptions regarding tablet computer usage during the lessons, “What are the problems that you observed while using tablet computers during the lessons?” question is asked to the students. Most common answers of the students are presented on Table 3.

Table 3. Problems Encountered While Using Tablet PC

Articles	f	%
It distracts my and my friends' attention during the lesson	35	58.6
I live charge problem at school	28	48.3
Technical problems (crash, activation, installing an application, not turning on etc.)	21	36.2
I feel concerned due to the danger that my tablet PC can be stolen	17	29.3
Other	7	12.1

¹A special kind of digital books especially started to be common with the FATIH Project.

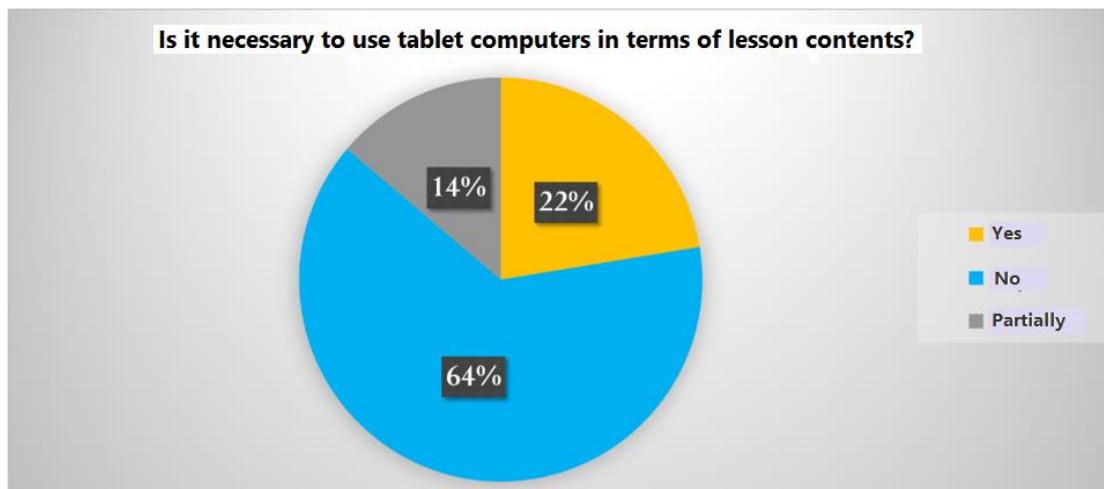
When Table 3 is examined, it is understood that the most important problem encountered during the lessons is distraction of students (%58.6) during the lesson according to student perceptions. Other problems encountered often are having charge problems at school (%48.3), technical problems (crash, activation, installing an application, not turning on etc.) (%36.2) and feeling concerned due to the danger that tablet PC can be stolen (%34.5). Some students' opinions regarding these problems are below:

- “More effective usage program, way and method should be developed [S7].”
- “Teachers do not know how to use them [S32].”
- “There is no infrastructure but they give tablet computers [S13].”
- “There is no infrastructure [S16].”
- “Battery of the tablet computers dies so fast [S39].”
- “There is no socket to charge [S51].”

Considering advantages and disadvantages of using tablet computers during teaching-learning process, according to students is it necessary to use tablet computers during the lessons?

Within the scope of the second research question, learners are asked whether using tablet computers is necessary to use during the lessons or not. When the given answers are examined, it is determined that 64% of the participants have the perception that it is not necessary to use tablet computers during the lessons, 22% say it is necessary and 14% think it is partially necessary (See Figure 3 below).

Figure 3. Student Perceptions regarding Whether It is Necessary to Use Tablet Computers during the Lessons or not



Majority of the students who participated in the study think that using tablet computers during the lessons is unnecessary. According to student perceptions, reasons of it are it affect teaching-learning process negatively and it causes waste of time due to the intensity of the lesson plan. Some student opinions related to this issue are below:

“It is not necessary. After tablet computers were given, some of our teachers tried to use them, but especially boys abuse this situation [S47].”

“It is not necessary. It prevents teaching of our teachers because everyone cannot turn them on so we waste time. Some students cannot charge. They prevent teacher to start the lesson because tablet computers are not turned on [S13].”

“No. There are a lot of subjects so our teachers race against time to catch up [S19]”

After determining student opinions regarding necessity of using tablet computers during the lessons, student opinions are taken to determine advantages and disadvantages of using tablet computers in the classroom for teaching-learning process. With this aim, “What are the advantages and disadvantages of using tablet computers during the lessons?” question is asked to the students. According to the answers given to that question, some student perceptions regarding benefits of using tablet computers during the lessons are below:

“Advantage of it is it makes access easy to some good resources. For literature, I save summaries of stories and novels asked in University Entrance Exams...[S37]”

“We can reach the information faster [S56].”

“Advantage of it is we can make our researches faster [S45].”

“Visual resources facilitate our understanding [S44].”

“We get rid of writing [S38].”

“We check problematic points for us [S49].”

Some student opinions regarding disadvantages of using tablet computers during the lessons are below:

“...I think there are many disadvantages. We study for University Entrance Exam that we race against time and it takes our time that we can use for solving tests with paper and pencil. Then quantitative lessons are also important obstacles... They take time [S37].”

“Teachers cannot cope with the students [S36].”

“There happens too much noise during the lessons. Some students watch films pretending as if they were looking at the book. They laugh. They prevent teaching [S35].”

“Although we should be kept away from technological devices, giving them to us is disadvantage [S50].”

Discussion, Result and Suggestions

According to the findings of the research, when students' purposes of tablet computer usage are analyzed, students mostly use tablet computers for listening to music, making research for homework, playing game and watching video. In the studies in the literature regarding this issue, it is emphasized that tablet computers are especially used for listening to music and playing game by students (Altin&Kalelioğlu, 2015; Öner&Kırkbeş, 2016). Related to this issue, Isçi and Demir (2015) state that students do not use tablet computers for educational purposes, they play game with their tablet computers during the lesson and it causes classroom management problems. Some findings of this study correspond to these findings, but according to other findings of the study there are some educational activities among students' purposes of tablet computer usage. These are making research for homework, reading e-book, access to educational web-sites and solving test. In terms of findings of the research, tablet computers are not used for teaching in many lessons. It is determined that they are used in some lessons on a limited level. Prominent reasons of this situation are classroom management problems and teachers' BIT competence level which were stated often in student perceptions. Basic reason of this perception is students think that teachers are inexperienced and unqualified for using tablet computers and interactive boards during the lessons because necessary training are not given to the teachers (Levy, 2002;



Somyürek, Atasoy&Özdemir, 2009). Related to this, in the literature it is stated as a precondition that teachers need to have sufficient technological literacy level to have effective technological integration (Cope and Ward, 2002; Usluel, Mumcu&Demiraslan, 2007; Yıldız, Sarıtepeci&Seferoğlu, 2013) because one of the obstacles for teachers to use technologies such as tablet computers effectively during the lessons is that teachers feel shy to use technology during the lessons because they think that they are unqualified (Sang, Valcke, van Braak, &Tondeur, 2010; Tondeur and et al, 2012). It can be said that teachers should have enough technological, pedagogical and content knowledge to use tablet computers effectively during the lessons (Lim, 2011).

The most important problem encountered while using tablet computers in the classroom and coming into prominence in student perceptions is the opinion regarding that they affect attention of the students negatively. In the researches made by Sommerich and others (2007) and Eren (2015), similarly to this study, another prominent problem about tablet computers is their charge problem. Similarly, in various studies related to tablet computers, it is seen that charge problem at school is important for students and teachers (Çetinkaya&Keser, 2012; Pamuk and et all, 2013; Kucukaydin, Bozdogan&Ozturk, 2014; Eren, 2015; Soykan, 2015).

It is determined that other important problems encountered while using tablet computers result from infrastructure problem, charge problem and technical problems. Likewise, Soykan (2015) states in his study that problems encountered most by students and teachers while using tablet computers during teacher-learning activities are because of infrastructure problem and technical problems.

When the opinions of the learners are examined, it is seen that perception which is using tablet computers during the lessons is not necessary comes into prominence. It can be said that basic reason of this perception is students think that using tablet computers during the lessons is unnecessary because teachers do not use them during the lessons (Altın&Kalelioğlu, 2015). Moreover, according to student perceptions, it can be also stated that some attempts to use tablet computers in the classroom cannot be accomplished due to some reasons such as intensity of lesson plan, classroom management problems and access problems.

According to perceptions of the participants, it is understood that using tablet computers during teaching learning process provides advantages in terms of easy access and speed during the lessons. Similarly, there are some studies showing that using tablet PC provides significant opportunities in view of easy access and speed of learning (Eren, 2015). In fact, that result can be accepted among general advantages of technologies used in education. Regarding this issue Clark (1994) states that technology can offer various opportunities in terms of accessibility, speed and cost in educational environments. However, majority of students who participated in this study stated that they did not use tablet computers during the lessons. According to that, it can be said that easy access to technology provided by giving tablet computers to students and teachers is meaningless if they do not contribute to the teaching-learning process (Lawless & Pellegrino, 2007).

According to student perceptions, disadvantages of using tablet PC during the lessons are it takes time and affects teaching negatively due to negative student behaviors. It can be said that this situation is closely related to effective technology integration. It is a fact that technology usage attempts not planned in the frame of student-centered method will have

similar results. It can be said that problems encountered now about tablet computers and interactive computers are not different from the problems encountered in the past while using television and videotape at schools and the problems encountered in the recent past about projection and educational teach ware in computer laboratories. It does not seem possible to have significant educational outputs of technology integration studies unless there is no interaction and participation of the students actively.

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