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Investigation of Post-Graduate Students' Attitudes Towards Mobile Learning and Opinions on Mobile Learning

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SUMMARY

It is thought that it is important to determine the attitudes of the postgraduate students we can see as academicians of the future in terms of making education activities by mobile devices quality and effective learning activities. The purpose of this study is determining the postgraduate Students' opinions about the mobile learning and attitudes about mobıle learnıng. The mixed research model was adopted in this study. The research was carried out in Konya Necmettin Erbakan University, Ahmet Kelesoglu Education Faculties with 30 students studying in different departments in 2016-2017 academic year. İn the result it is reached that Postgraduate Students' attitudes about mobile learning doesn't change according to their gender status, age groups, education status and daily İnternet using but change according to mobile device ownership status. Also, Qualitative findings were positive opinions in the use of mobile technologies in education, mobile technologies benefit teachers and students, the effects of mobile technology on attitude and motivation, future of mobile technology education headings. There are very few negative opinions in these headings. "Which is the best lesson for using mobile technology?" The answer to this question has often been defined as science, information technology and social science.

Keywords: Mobile Learning, attitudes, opinion, postgraduate Students.

INTRODUCTION

In today's world which is defined as information age, information society has come to reach a society that has access to information, shares knowledge, produces information, and consumes information more quickly as a result. Undoubtedly, technology plays an important role in such a society. Researches and studies on information and technology have increased the interest and curiosity which is technological nowadays. Increasing interest and curiosity have been influential in the rapid expansion of technology and the widespread availability of technological devices. The Turkish Statistical Institute explained the availability of information technology in the households. Looking at the data, it is seen that the rate of mobile phone / smart phone ownership of dwelling is 53.7% in 2004, this ratio is increasing every year and it reached 97.8% in 2017 (TUİK, 2017).

Technological devices in every field such as health, industry have also been important in education. With the advent of technological devices in the field of education, concepts such as virtual classes, online education, synchronous-asynchronous learning, distance learning, electronic learning, mobile learning, and learning trends have been developed and this area has greatly improved. This has brought new quests and anticipations to the users. Requests such as instant access to information and instant sharing of information necessitate the need to be able to learn at anytime and anywhere, independent of time and place, on devices to be used. As a matter of fact, the introduction of our life in the field of education of computer and internet has an important effect in the independent learning processes of time and place. However, the focus on the computer and internet-connected environment and the fact that the learning takes place in these settings makes the user dependent on that medium. This restricts the user to being fully independent and always lacks the thought of learning everywhere. As a matter of fact, Bulun, Gulnar & Guran (2004) emphasized this situation in the past by saying that the student did not offer full freedom in terms of location and time independence, in that the student realized with internet connection, desktop computers and fixed telephone line in the past. Over time, this led to the need for portable, more widespread devices that would provide space and time independence in the field of education. These devices need to be small, autonomous, and self-sufficient to support people as well as people at all times and places, and to be used for learning. The only technology in this sense is mobile devices (Kici, 2010; Agca & Bagci, 2013). The most used mobile communication tools that help to access, use and process information quickly can be listed as follows: Smart mobiles, mobile computers, tablet computers, laptop computers, netbook, iPad, iPod touch, digital audio recorders, portable MP3 player, personal digital assistant, portable gadgets and USB memory.

When you look at the characteristics of mobile devices, the features such as wide usage areas, being time and space independent, and being portable are remarkable. With these features provided to the user, the idea of using

mobile devices in education has spread rapidly. The use of mobile devices in education has influenced the formation of the concept of mobile learning. It is possible to reach some definitions made by researchers even though there is no accepted definition of mobile learning because it is newly introduced and constantly developing in the field of education (Celik, 2013; Elcicek & Bahceci, 2015; Kici, 2010). Mobile learning is an e-Learning activity conducted through mobile devices and smartphones (Quinn, 2000). Mobile learning is a field that combines two very promising areas such as mobile computing and e-Learning (Trifonova & Ronchetti, 2003). Georgiev (2005) stated that mobile learning is not a new concept, but a new form of e-learning or distance learning applications.

Work in the field of mobile learning first started in the early 2000s. After all these years, especially Turkey, Korea, India, Nigeria, Thailand and Japan, especially of mobile devices and technology in education in many countries in the world have increased interest in the use effectively, even being shown as mobile learning, educational technologies of the future. In order to increase the effectiveness of the teaching service, studies supporting mobile learning have begun to be carried out in many institutions. Universities such as the University of Phoenix, Purdue University, George Fox and Duke University allow students to access online course material from mobile devices, participate in discussions, ask questions, and use recorded lesson notes as audio stream, Abilene Christian University distributes IPhone to every student in a Project (Abile Christian University, 2009; Raths, 2010; Venable, 2011). In Turkey, The FATIH project has been developed with the objectives of integrating technology education and providing technological tools and internet connectivity to pre-school, elementary school, middle school and high schools in order to provide equal opportunities to all schools. Within the scope of this project, tablets were started to be given to the teachers and students in the related schools (MEB, 2011). In addition, 38 universities including 17 undergraduate and 114 associate degree programs offers distance education in Turkey. It is observed that mobile devices can be used to access learning management systems in 11 undergraduate and 36 associate degree programs at these distance education universities (Bingol, 2016). Looking at the developed projects, it can be said that the use of mobile devices in education has an important place regardless of different countries and different degrees, and various studies have been carried out in order to make it widespread. As a matter of fact, Yilmaz (2016) stated that "İf the mobile age is to become a future, the learning way of the future may be mobile learning." emphasized that mobile learning will continue to be important in the future as well. Indeed, if the mobile age is to become a future, the learning of the future may be mobile learning (Yilmaz, 2011).

Mobile learning has become increasingly popular as individuals prefer to use mobile devices to look at electronic mail, learn lecture notes and lesson schedules, access different sources of information, or meet more diverse needs (Guzelyazici, Donmez, Kurtulus & Haciosmanoglu, 2014). The increase in the use of mobile devices, the ability to be portable, and the opportunity to learn anywhere at any time indicate that mobile devices will have a significant place and contribute a lot in education. The studies show that mobile learning touch many important points such as equality of opportunity in education, co-operation, providing interactive environments, development of critical thinking, creativity and self-regulation skills, increased motivation and always having learning everywhere and advantage in independent and individualized learning (Bozkurt,2015; Corbeil ve Valdes-Corbeil, 2007; Hughes, 2012; Sha, Looi, Chen ve Zhang, 2012; Shih, Hwang ve Chu, 2010).

Joo & Kim (2016) stated that it is necessary to define prejudice and attitude and to convince the learner of the practicality and benefit of new technology. As a matter of fact, when the literature is scanned, it is possible to observe that there are many studies conducted to determine the opinions, attitudes and awareness of students, prospective teachers and academicians who are in different stages and departments regarding mobile learning and mobile devices (Al-Fahad, 2009; Khwaileh & AlJarrah, 2010; Elcicek & Bahceci, 2015; Yokus, 2016; Kici, 2010; Pan & Akay, 2016; Bal, 2010). However, studies on graduate students have been limited in the literature (Yokus, 2016).

It is considered that it is important for the graduate students to be seen as academicians and educators of the future who want to improve themselves in their fields, most graduate students must be active in different levels of education such as secondary education and university, that they are important in terms of being guided by the innovations and developments to be made in education and training, attitudes and their opinions are thought to be important in ensuring that a quality learning and teaching process is effectively followed and that it will contribute to the field if problems are to be solved.

This research was conducted with the aim of determining the attitudes of the students and the graduate students towards mobile learning. In response to this aim, the answers to the following questions were sought;

The attitudes of students towards mobile learning;
1. Is it different according to gender?
2. Is it different according to their age?
3. Is it different according to their daily connection to internet?

4. Is it different according to their durations of mobile device usage?

Educational use of mobile technologies;
1. What are your thoughts about it?
2. What benefits does it provide to teachers?
3. What benefits does it provide to the students?
4. How does it affect your attitude and motivation towards the course?
5. Is it appropriate for each course and topic? What is the best course and subject for you to use?
6. What are your opinions on its future?

METHOD

Study Group

The participants of the research are the graduate students who are studying in different departments at Konya Necmettin Erbakan University and Ahmet Kelesoglu Education Faculty in 2016-2017 academic year. The research was conducted with the participation of a total of 30 graduate students. The distributions according to gender and age status of the students participating in the survey are given in Table 1.

Table 1. Participants' Demographical Data

		N	**%**
Gender	Female	15	50,0
	Male	15	50,0
Age	21-25	21	70,0
	26-30	9	30,0
	Total	**30**	**100,0**

According to Table 1, 15 (50%) of the participants are female and 15 (50%) are male students. When the age range of the participants is examined, it is seen that 21 (70%) participants are in the age range of 21-25 years, and 9 (30%) are in the range of 26-30 years.

Research Design

In this study, mixed research method has been adopted. Mixed method; quantitative and qualitative research methods and paradigms are used together (Johnson ve Christensen, 2004). Mixed method whish is used in the research allows for a more in-depth study of the subject as it reaches more participants. As a matter of fact, Green et al. (2005) state this situation with the following words: 'Quantitative methods provide access to many participants, while the data obtained with qualitative methods such as observation, interviewing, etc., allows for a more in-depth study of the research topic.'

Data Collection Tools

The *'demographical data form'* consisting of the frequency of collecting the personal information of the students and the frequency of gender, age, possession of mobile device and using mobile devices for years, accessing internet through mobile devices and connecting to daily internet are used.
In the quantitative part of the study, *'mobile learning attitude scale'* developed by Demir and Akpinar (2015) was used to determine the attitudes of the students to mobile learning. The attitude scale for mobile learning consists of four factors and 45 items. The generated items are of the five-point Likert type and are rated as; fully agree (5), agree (4), partially agree (3), disagree (2), completely disagree (1). The loads of the items in the scale were between .82 and .40. The Cronbach's alpha reliability coefficient of the final scale was calculated as .950. The results of item analysis based on averages of the upper and lower groups of all the items in the scale were found to be significantly different ($p<.05$). The factors involved in the scale are called satisfaction, learning effect, motivation and usability.

The qualitative part of the research is composed of 13 open-ended research questions prepared by researchers to determine the opinions of graduate students on mobile learning. The form, which was revised under the control of 3 field specialists, was finalized as 6 open-ended research questions. The open-ended questions asked in the 'semi-structured form' of the participant are;
1. What are your thoughts on using mobile technology in education?
2. What benefits does the use of mobile technology provide to teachers?

3. What benefits does mobile technology use have for students?
4. How does working with mobile technologies affect your attitude and motivation towards your courses?
5. Can mobile technologies be used in every course and subject? What is the best course and topic for its usage in your opinion?
6. What are your opinions about the future of mobile technology education?

Data Analysis and Interpretation

Within the scope of the research, the data obtained from 30 graduate students were analyzed and transferred to the SPSS 21.0 program. The demographical data collected from the participants are explained by giving frequencies. In order to determine whether the post-graduate students' attitudes towards mobile learning differ according to the variables, the scores they receive from the attitude scale towards mobile learning; t-test was used for unrelated samples in order to determine whether there was a significant difference in age, gender, age range and mobile device usage. In addition, in order to determine whether participants' attitudes toward mobile learning scale differed according to their international attachment status, one-way ANOVA was used for unrelated samples.

Six semi-structured open-ended questions asked to support quantitative data were analyzed using qualitative research techniques using content analysis. Content analysis is a method used in analyzing written and visual data (Silverman, 2001). Qualitative research data is analyzed in four stages by content analysis method. These steps; coding of data, finding of themes, arrangement of codes and themes, identification and interpretation of findings (Yildirim and Simsek, 2013). In this part of the workshop, the answers given by the participants to the questions were coded and the themes and sub-themes were obtained. The obtained data were regulated and grouped in terms of similarities. In addition, 3 answers were given to each question. The names of the participants in the study group were used by coding each as K1, K2, K3 ... K30 in the order.

FINDINGS

Quantitative Findings

The findings of the research question *"Do the attitudes of the students with a background to mobile learning differ according to gender?"*

The unrelated samples t - test to determine the attitudes of the study group to the mobile learning according to the gender variable are given in Table 2.

Table 2. Results of Attitude Scale for Mobile Learning Scores according to Gender Status

Groups	**N**	$\overline{X}$	**S**	**Sd**	**t**	**p**
Female	15	174,86	28,91	28	-1,576	.126
Male	15	187,60	11,9			

*P<0.05

As shown in Table 2, the significance level of * p <.05 is .126> .05, so the result is not significant. The average score of the students in the study group on the mobile learning attitude scale was similar (males' average = 187.60, females' average = 174.86). Therefore, the attitudes of students to mobile learning do not differ according to gender.

The findings of the research question *"Do the post-graduate students' attitudes towards mobile learning differ according to age?"*

The unrelated samples t - test to determine the attitudes of the study group to mobile learning according to the age variable are given in Table 3.

Table 3. Results of Attitude Scale for Mobile Learning Scores according to Age

Groups	**N**	$\overline{X}$	**S**	**Sd**	**t**	**p**
21-25	21	179,19	25,79	28	-.748	.461
26-30	9	186,00	12,86			

*P<0.05

As seen in Table 3, the result is not meaningful, as * p <.05 for significance level .461> .05. The study group students' scores on the mobile learning attitude scale were similar (21-25 age = 179.19; 26-30 age = 186.00). Therefore, the attitudes of students to mobile learning do not differ according to age.

The findings of the research question *"Do the post-graduate students' attitudes towards mobile learning differ according to their durations of mobile device possession?"*

The unrelated samples t - test to determine attitudes towards mobile learning according to the duration of the study group students' mobile device possession are shown in Table 4.

Table 4. Results of Mobile Learning Attitude Scale Scores on durations of mobile device possession

Groups	**N**	$\overline{X}$	**S**	**Sd**	**t**	**p**
4-6 years	3	196,66	2,08	28	1,254	.001
More than 6 years	27	179,51	23,30			

*P<0.05

As shown in Table 4, the significance level is .001 <.05 for significance level * p <.05. The average score of the students' attitudes towards mobile learning attitude scale (average of 4-6 years = 196.66, average of 6 years more = 179.51) was different. Therefore, the attitudes of students to mobile learning differ according to their durations of mobile device possession.

The findings of the research question *"Do the post-graduate students' attitudes towards mobile learning differ according to their daily internet usage?"*

One-way analysis of variance (ANOVA) for unrelated samples was conducted in Table 5 to determine students' attitudes toward mobile learning according to their daily internet usage frequency.

Table 5. Results According to Daily Internet Usage Scores of Attitude Scale for Mobile Learning

Daily internet usage	**N**	$\overline{X}$	**S**
1-2 hours	2	174,5000	6,36396
3-4 hours	13	175,3846	29,56783
5-6 hours	5	186,2000	8,28855
7 hours and over	10	187,7000	18,37903
Total	30	181,2333	22,68477

	Source of Variance	**Sum of squares**	**Sd**	**Squares Average**	**F**	**p**	**Diversity**
Daily internet usage	Between groups	1076,890	3	358,963	.674	,576	None
	Inside groups	13846,477	26	532,557			
	Total	14923,367	29				

As seen in Table 5, there is no significant difference between the scores of the study group students' attitudes towards mobile learning according to the findings of using univariate sample ANOVA [F (3- 26) = .674, .576> .05].

Qualitative findings

The findings of the research question *"What are your thoughts on using mobile technology in education?"*

Developed codes for participants' responses to the question "What do you think about the use of mobile technology in education?" are subdivided into 3 categories. These 3 categories are designated as technical, impact and usage headings. These categories were separated according to the answers given and analyzed according to their "positive", "negative", "both positive and negative" aspects. The frequencies of the responses given to this question are given in Table 6.

Table 6. Opinions about the use of mobile technologies in education

CATEGORY	**THEMES**	**CODES**

		Positive Direction (N)	Positive and Direction (N)	Negative	Negative Direction (N)
TECHNICAL	Infrastructure	1			
	Control	1	1		1
	Support	1			
EFFECT	Active participation of students	2			
	Knowledge persistence	2			
	Learning by practising	1			
	Duration of attention		1		
	Meaningful lessons	1			
USAGE	Ease	5			
	Speed	2			
	Accessibility	1			
	Quality	1			
	Flexibility	1			
	Other	13	1		
	TOTAL	**32**	**3**		**1**

When analyzed the responses, multiple directions were found in an answer, so it was observed that more than one theme was used in an answer. Table 6 shows that respondents were generally positive (n = 32), respondents indicated positive and negative aspects (n = 3), and one participant indicated negative (n = 1). From the answers given in the technical category, n = 3 indicating positive direction, n = 1 indicating positive and negative direction and n = 1 comment indicating negative direction appear to be made by going out of the way. In the impact category, there appears to be no negative direction, n=6 indicating positive direction, n=1 positive and negative direction. In the usage category, n = 6 indicated positive direction, there are no answers indicating positive and negative direction and negative direction. In the other section, without commenting any theme, n = 13 responding positively, it has been found that there are n = 1 answers in which "positive and negative direction", which is not in the frame of any theme, are stated together.

Some of the participants' responses to this question are as follows:
"I find it useful. As a result, we live in the age of technology and are open to innovation. The lesson is meaningful and the students are active in learning." (K2).
"I think mobile technology has an important place in education. I also believe that modern education will be carried out entirely through mobile technologies in the future." (K4).
"It is good that everyone has the opportunity of this access but control is so important." (K23).

The findings of the research question *"What benefits does the use of mobile technology provide to teachers?"*
Developed codes for respondents' responses to the question "What benefits does the use of mobile technology provide to teachers?" are subdivided into two categories. These 2 categories are defined as effect and usage headings. These categories are divided into themes according to the answers given. The use of this question-oriented theme has been used by dividing sub-themes. The answers were analyzed according to their "positive" and "negative" aspects. The frequencies of the responses to this question are given in Table 7.

Table 7. Mobile Technologies' Benefits to Teachers

CATEGORY	THEMES	CODES	
		Positive Direction (N)	Negative Direction (N)
EFFECT	Attention/ Increasing Interest / Motivation	5	
	Permanent and Efficient Learning	5	
	Continuous Communication and Feedback	5	
	Ease in Teaching Difficult Subjects	3	
USAGE	Speed	8	
	Accessibility Time	5	

	Place	3	
Multimedia Richness		3	
Entertainment		2	
Ease	in preparation	2	
	in accessing Information	1	
Flexibility	in Review	1	
Economics	in preparation	1	
TOTAL		**44**	**0**

When Table 7 is examined, it is observed that no negative direction is given in the answers given (n = 0). When the positive directions (n=44) are examined, n = 18 in the effect category and n = 16 in the usage category. When the themes are examined in the effect category, n=5 results are given under attention / attention / motivation, lasting and productive learning, continuous communication and feedback, and n=3 answers are given in terms of convenience in teaching difficult subjects. In the usage category, it was found that speed (n = 8) contact was among the most mentioned benefits. It has been found that the themes of convenience, flexibility, affordability and accessibility are divided into sub-themes, while in the case of sub-themes, n = 8 positive directions are indicated in the sum of accessibility categories.

Some of the answers given by the participants to the findings in these themes are:
"In education, the time constraint is lifted. It allows to learn fast and more permanently." (K6).
"*It also avails teachers to monitor their students outside the school and motivate them and evaluate them over a longer period."* (K20).
"*I can keep different lecture notes on my mobile device; I can take advantage of them when necessary."* (K22).

The findings of the research question "*What benefits does the use of mobile technology provide to students?"*
For the question "What benefits does the use of mobile technology provide to students?", 2 categories and themes were analyzed in the analysis made by the answers given by the participants, and sub-themes were created in order to make better definitions within the themes. These categories are called effect and usage, and respondents' responses are coded according to their "positive" and "negative" aspects. The frequencies of the coding made for this question are given in Table 8.

Table 8. Mobile Technologies' Benefits for Students

CATEGORY	THEMES		CODES	
			Positive Direction (N)	**Negative Direction (N)**
EFFECT	Attention/ Increasing Interest / Motivation		8	
	Permanent and Efficient Learning		4	
	Different Perspective / Openness to Innovations		3	
	Repeat / Reinforce		2	
	Transfer to daily life		2	
	Productivity / Feeling of Success		2	
	Ease in Teaching Difficult Subjects		1	
	Individual Learning		1	
USAGE	Entertainment		4	
	Accessibility	Time	4	
		Place	3	
	Ease	In accessing Information	3	
		In the Course	1	
	Speed		1	
	Multimedia Richness		1	
	Other			1

TOTAL	**40**	**1**

When Table 8 was examined, it was found that n = 23 opinions were expressed positively in the effect category and n = 17 opinions were positively indicated in the usage category. It appears that one of the participants indicated negative direction (n = 1) without specifying any theme. The results of the most-cited attention/motivation/interest motivation (n = 8) in the effect category have been reached, under the usage category, the results show that the most used themes are sub-themes of space (n = 3) and time (n = 4), under the theme of convenience, the conclusions expressed in the sub-clause of convenience (n = 3) provided for access to information have been reached. In addition, the most frequently mentioned theme was entertainment (n = 4) in the category of usage.

Some of the answers which respondents gave who supported the analysis for this question were: *"With mobile technologies, learners can learn more quickly by keeping information in a more convenient memory because they can be addressed to more than one sensation. It is easier and more enjoyable for them to reach the information."* (K12).
"Competitions can be organized for events that attract students. Each student can be given the opportunity to make projects that are relevant to him or her, which can inspire students' sense of success." (K20).
"It attracts students and increases their motivation. They learn to access information from different environments." (K24).

The findings of the research question "*How does working with mobile technologies affect your attitude and motivation towards your courses?"*

Three categories have been identified for determining the attitudes and motivations towards the courses in the direction of the answers given in the question "How does working with mobile technologies affect your attitude and motivation towards your courses?". These categories are called technical, effect and usage headings. The answers given by creating the themes and sub-themes for the categories were coded and analyzed according to the "positive", "negative" and "both positive and negative" directions. The frequencies of these analyses are given in Table 9.

Table 9. The Effects of Mobile Technologies on Attitudes and Motivation towards Courses

CATEGORY	**THEMES**		**CODES**		
			Positive Direction (N)	**Positive and Negative Direction (N)**	**Negative Direction (N)**
TECHNICAL	Infrastructure			1	
EFFECT	Active Participation		2		
	Permanent and Efficient Learning		1		
USAGE	Ease	Work	3		
		In accessing information	1		
	Entertainment		2		
	Accessibility	Time	1		
		Place	-		
	Confidence		1		
	Multimedia Richness		1		
	Other		14	4	
	TOTAL		**26**	5	0

When Table 9 is examined, it was found that participants' attitudes and motivations of using mobile technology in courses weren't affected negatively (n = 0), that some participants were affected both positively and negatively (n = 5) and most participants' attitudes and motivation of course were affected positively. In the technical category, it was observed that in the answer given by one participant (n = 1) positively and negatively together, n = 3 positive direction in impact category and n = 8 positive direction in usage category were observed. In addition, some of the answers showed that n = 14 positive direction without specifying any theme, n = 4 positive and negative direction were expressed in reply without specifying any theme.

Some of the answers that respondents gave who supported the analysis for this question were:
"I make my work easier and enrich my motivation." (K9).
"It may vary depending on the course and course content. But overall it has an impact on the positive side." (K20).
"The course is efficient and interactive when the mobile technology is used correctly. Such a lesson always keeps the motivation of the teacher alive and increases his energy." (K12).

The findings of the research question *"Can mobile technologies be used in every subject and course? What is the best course and topic for its usage in your opinion?"*

These two categories of courses and topics were named as features, based on the answers to the questions asked to determine the best course for participant mobile technology use and the usability of the lessons. In the courses and topics category, the subject names and subheadings are given according to the answers given. The feature category is divided into themes according to the answers given. The frequencies of responses coded according to "positive", "negative", "both positive and negative" directions are given in Table 10.

Table 10. The most suitable course for mobile technology usage and opinions about topic

CATEGORY			CODES			
			Positive Direction (N)	**Positive And Negative Direction (N)**	**Negative Direction (N)**	**TOTAL**
COURSES AND TOPICS	Science	Force And Motion	1			**8**
		The Structure Of the Cell	1			
		Other	5	1		
	Information Technologies	Communication Tools	1			**5**
		Other	3	1		
	Math	Numbers	1			**3**
		Other	2			
	Geometry	Angles	1			**1**
		Other				
	Social Sciences		3	2		**5**
	Music		3			**3**
	Turkish		1		1	**2**
	Drama		1			**1**
	English		1			**1**
FEATURE	Applied		2	1		**3**
	Experiment / Observation		2	1		**3**
	Visual Weighted		3			**3**
	Activity		1			**1**
	Other		6		1	**7**
	TOTAL		**37**	**7**	**2**	**46**

When Table 10 is examined, there are 9 headings in the courses and subjects category and it is seen that n = 23 positive direction, n = 5 positive and negative direction, n = 1 negative direction are indicated in these headings. In addition, mathematics (n = 3), music (n = 3) were found to be suitable for the use of mobile technologies while science (n = 8), information technology (n = 5)), Turkish (n = 2), English (n = 1), geometry (n = 1) and drama (n = 1) courses are suitable for the most. When we look at the courses and topics category, it is seen that different topics are mentioned as sub-themes. When examining the feature category, there are 4 headings and n = 14 positive direction, n = 2 positive and negative directions are indicated in these headings. When the answers given are examined, the answers that are given without any course, topic and feature are observed and these answers are collected under the other option. Looking at the other option, n = 6 positive direction and n = 1

negative direction are indicated. When only the codes are taken into consideration, it is found that n = 37 positive direction, n = 7 positive and negative direction, n = 1 negative direction frequencies exist.

Some of the respondents who supported the analysis for this question were:
"It may not be appropriate for every subject, visual material can be used for 3D imaging in predominantly courses such as mathematics, science and technology." (K8).
"*Available for each course. It can be more effective for visuality and applied lessons.*" (K24).
"*Available. Information Technology lesson.*" (K3)

The findings of the research question *"What are your opinions about the future of mobile technology education?"*

Two categories have been formed in line with the answers given to the question asked by the purpose of gathering opinions about the future of mobile technology in education. These categories are called effect and support. Themes were created to indicate the answers given under these categories. Four themes under the effect category are divided into 4 themes under the support category. The answers are coded as "positive direction" and "negative direction" and their frequencies are presented in Table 11.

Table 11. Opinions about Mobile Technology Education's Future

CATEGORY	THEMES	CODES	
		Positive Direction (N)	**Negative Direction (N)**
Support	Importance	3	1
	Facility	1	1
	Equal Opportunity	1	
	Necessity	1	
Effect	Classical Education Support	1	
	Permanent Learning	1	
	Productivity	1	
	Communication		1
	Other	20	
	TOTAL	**29**	**3**

According to Table 11, n = 6 positive direction and n = 2 negative direction exist in the support category, n = 3 positive direction and n = 1 negative direction exist in the effect category. In the support category, it is seen that the most repeated theme is "important" when the theme is viewed positively. It was found that the only negative direction in the effect category was "communication". In the participants' answers, n = 20 was found to indicate a positive direction without specifying any theme. When we look at the coding, it is found that n = 29 positive directions and n = 3 negative directions are indicated in total.

Some of the answers that respondents gave who supported the analysis for this question were:
"The future of mobile technology is absolutely indisputable, and the mobile devices that people carry with them are becoming an indispensable part. Therefore, it is quite obvious that mobile devices will be a serious place in education today and in the future." (K4).
"I can not see the future if I go out of the tablet distribution on Fatih project. But I think that if the opportunities are provided and focused, it will be effective." (K20).
"I do not think it's entirely mobile technology, but I think it will be used alongside classical training for support." (K7).

CONCLUSION AND DISCUSSION

This study was conducted with the participation of 30 graduate students, who determined the attitudes of the aimed graduate students to mobile learning and their opinions towards mobile learning. The results of the findings from the participants as a result of the research are as follows.

There was no significant difference between participants' attitudes toward Mobile Learning and their gender [P = .126> .05, P <.05]. In other words, attitudes towards Mobile Learning do not change according to the genders of the participants. This finding is consistent with those of Elcicek and Bahceci (2015), Unal and Yuksel (2014), Yang (2012), Sagır and Goksu (2013). However, Baek, Zhang and Yun (2017) found that attitudes towards mobile learning differ according to gender, while female teachers' attitudes towards mobile learning are higher than male teachers' attitudes in their efforts to determine their attitudes towards mobile learning. This finding differs from the results in the research.

There was no significant difference between participants' attitudes towards Mobile Learning and age ranges [P=.461 >.05, P<.05]. In other words, participants' attitudes towards mobile learning by age do not change. Studies conducted by Elcicek and Bahceci (2015 Sagır and Goksu (2013) also support the findings that the attitudes towards mobile learning do not differ according to age variables. However, Al-Emran, Elsherif and Shaalan (2016) found in their study of the attitudes towards mobile learning in higher education that attitudes differed according to the age of the students, but that there was no evidence of where this difference was.
It has been found that participants who use mobile devices for 4-6 years have a significant difference between their average attitudes towards mobile learning (= 196.66) and their average attitudes towards mobile learning (= 179.51) using mobile devices more than 6 years. In other words, attitudes towards Mobile Learning vary according to participants' mobile device usage times. Al-Emran, Elsherif, and Shaalan (2016) looked at their attitudes toward mobile learning in higher education and found that attitudes differed according to whether educators had smartphones and found that there was no statistically significant difference between attitudes of educators on ownership of smartphones.

There is no significant difference between the scores attained by the participants on the Mobile Learning attitude scale, depending on the daily internet connection [F(3-26)=[.674, p=.576, p>.05]. In other words, participants' attitudes towards mobile learning do not change according to the daily internet connection situation.
Consequently, in this study, participants' attitudes towards Mobile Learning don't differ in terms of sex, age range, and day-to-day Internet connection; however attitudes towards mobile learning were found to be significantly different from those on mobile devices.

As a result of analysis for qualitative findings, categorizations were made according to the answers given and the categories were analyzed according to the directions of "positive", "negative", "both positive and negative" divided into themes and sub-themes for some questions. For the question *"What do you think about the use of mobile technology in education?",* three categories were created under the title of technique, effect and usage. For this question, the participants reached n = 32 positive direction, n=3 positive and negative direction, and only one participant indicated negative direction (n = 1). In other words, when the frequencies were examined, it was found that most of the participants stated that the use of mobile technologies in the field of education was positive and effective, and that the negative answer was about the control relation in the technical category. Looking at the literature, it can be seen that the use of mobile technologies in education is beneficial and effective, and the positive attitudes of mobile technologies are generally exhibited in education (Al-Fahad, 2009; Dashti and Aldashti, 2015; Dogan and Akbarov, 2016). However, Al-Fahad's (2009) study concluded that the use of mobile technology in education would result in high costs and negative aspects of the quality of existing networks. In this case, it can be deduced that the use of mobile technologies in education is a positive and effective method when necessary support and supervision is provided. As a matter of fact, Menzi, Onal and Calıskan (2012) noted technical support, infrastructure and cost problems in their research and as a result of overcoming these problems, they pointed out that mobile technology will be adopted and used more in education.

When the answers to the question *"What benefits does the use of mobile technology provide to teachers?"* is analyzed, it is seen that they are categorized as effect and usage headlines, n = 18 positive direction under the effect category and n = 16 positive direction under the usage category. The benefits to be provided to the teachers from the participants are among the results that do not give negative opinion on the question of how many. Looking at the frequencies, it was found that the use of mobile technologies enabled the teachers flexibility in terms of time and space, and that the speed factor in using mobile technology had an important place in the positive aspects indicated by the participants. In order to determine the benefits that mobile technology provides to students, the effect and usage category was created for the question "What benefits does mobile technology usage has for students?". In this question the themes are divided into sub-themes in terms of better definition. In the answers given, n = 23 positive aspects were indicated under the effect category and the findings were that most of the attention / interest boosting / motivation themes were used, n = 17 positive direction in the usage category and subspaces of time and space were expressed under the accessibility theme. In addition, it was observed that only n = 1 of the participants pointed out the negative direction of the question

"What benefits does mobile technology usage has for students?" Looking at the literature, the results of the studies carried out between the benefits provided to the students and teachers by the usage of mobile technology in education, there appears to be expressions such as the chance to learn more, cooperative learning opportunities, providing effective learning because they can provide immediate support, offering new learning opportunities and enriching learning environments, boosting self-confidence, and helping themselves to improve themselves (Al-Fahad, 2009; Dashti and Aldashti, 2015; Yang, 2012). In addition, Alhassan's (2016) study emphasizes some of the advantages of using mobile technology in education. These are; increasing the motivation and interaction among the students, technically preparing the students for the future, increasing the efficiency of learning through access to knowledge and communicating with peers, using the facilities of the university. In addition, Alhassan's (2016) study also draws attention to some disadvantages of using mobile technologies in education. These disadvantages are that the current state of mobile technology is not suitable for higher education, the interaction between students and teachers with these technologies is not as natural as the interaction in the same room, and the use of mobile learning technologies is weaker than the use of e-Learning technologies by faculty members.

The answers to the question *"How does working with mobile technologies affect your attitude and motivation towards your courses?"* are divided into three categories under the name of technique, effect and usage. These categories are divided into themes and sub-themes and "positive, negative, positive and negative" and are analyzed. When the answers were examined, it was observed that n = 26 answers indicating that participants had positive attitudes and motivations of mobile technologies, n = 5 responses indicating that both positive and negative aspects were found, and no participant indicated negative direction was found. Among the other findings, no positive theme was given at n = 14 of the positive answers given, and the most positive answer (n = 8) was collected under the usage category. As a result it has been observed that working with mobile technologies has a positive impact on motivation in the majority of participants.

In the questions "*Can mobile technologies be used in every subject and course? What is the best course and topic for its usage in your opinion?",* analyses were performed under the categories of courses and subjects and feature and the courses and subjects category was divided into theme names and topics. The feature category is examined both positively and negatively, both positive and negative aspects. A total of 9 answers are given under the name of the course where mobile technologies can be used and the most frequent course is science (n=8) and from the point of view of use, it was observed that n = 37 positive direction, n = 7 positive and negative direction and n = 1 negative direction exist. In other words, participants generally stated that mobile technologies are available for every course and subject but may be more effective in terms of some courses. Dashti and Aldashti (2015) have found that mobile technology can be used in all university courses in studying English language learners' attitudes towards mobile learning. This finding supports the findings.

When you look at the answers to the question "*What are your opinions about the future of mobile technology education?",* it is observed that there are two categories under the name of effect and support. These categories are divided into 8 themes; 4 for the effect category and 4 for the support category in order to make a more detailed analysis. Among the answers given, the participants were found to have n = 29 positive direction and n = 3 negative direction. In other words, the participants are thinking that mobile technologies will increase their influence and importance in the field of education in the future and they have been advised that they need to increase the importance and support. It was observed that participants thought that mobile technology would increase the influence and importance of future education, and that the importance and support needed to be increased.

As a result, the usage of mobile technologies in the field of education has been seen as beneficial and effective in terms of teachers and students, various opportunities will be presented, and these opportunities will affect attitudes and motivation positively. However, in this process, by providing supervision and support, the findings obtained in accordance with the answers are required to improve the infrastructure.

This study examined the attitudes of post-graduate students towards mobile learning according to sex, age ranges, daily internet connection situation and mobile devices possession. By gathering more demographical data with more participants, researchers can identify attitudes towards different variables. Obtaining ideas from the opinions on qualitative questions and eliminating any deficiencies in mobile learning projects can be eliminated. It is thought that this work will be effective in the direction of future work to be done.

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