Examining K-12 Students' Preferences and Attitudes on Mobile Learning

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The aim of this study is to examine K12 students' preferences and attitudes on mobile learning. In this study, causal-comparative method was used. The sample of the study were 236 students (127 females, 109 males) at K12 level. The students are enrolled in primary (n=104), secondary (n=77), and high school (n=55) levels. The data in the study were collected through a questionnaire. According to the results, watching videos, playing music, playing games, taking a picture, accessing the Internet are the most common uses of mobile devices for the students. The students' attitudes towards mobile learning is highly positive. The male students' perceived ease of use towards mobile learning is higher than females. The secondary and high school students' perceived ease of use is higher than primary school students. Moreover, the high school students' desire for learning is higher than the others. Implications were discussed in terms of practices for mobile learning in K12, and directions for further research.
Keywords: Mobile learning, K12 students, Mobile devices, Gender, Attitude

INTRODUCTION

The development of learning from distance has flourished from distance learning (d-learning) to electronic learning (e-learning), and from e-learning to mobile learning (m-learning) (Keegan, 2002). The developments of technology as well as social life have necessitated these moves in the concept of learning. As the internet moved from PC era to Web 1.0, the learning content was digitalized and shared through websites with the students from distance and the access to information was easier and more practical than ever. The move from Web 1.0 to Web 2.0 enabled individual teachers to not only share ready-made materials provided by educational providers but also to create their own digital ad-hoc materials and share with their students in platforms and by various mobile devices. The spread of wireless internet connection and the move from Web 2.0 to Web 3.0 gave teachers and students the opportunity to contact in real time with each other and with content anywhere and anytime (Boyinbode, Ng'ambi, & Bagula, 2013; Kutluk & Gülmez,

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2014). In this respect, the learning could occur in multiple contexts as the students are able to access the learning environments with their own personal electronic devices and to interact with the teachers and the content.

LITERATURE REVIEW

Mobile learning is conceptualized as portable, hybrid, ubiquous, immediate and connective, and adaptable (Bañares-Marivela & Rayón-Rumayor, 2017). The ubiquous nature of the mobile phones that makes them an attraction in mobile learning which can be formal or informal, has the potential to bridge the in-class and out-of-class learning (Kukulska-Hulme, 2018). This is evidenced by the developments of the Wi-Fi and GPS (global positioning system) technologies as they made it possible for students to access to the Internet and social media freely which in addition enabled the use of location-based services and tools. Furthermore, mobile learning replaces books and other content delivery modes with mobile portable devices, facilitates the collaboration among students and the content search and creation for both teachers and students (Nassuora, 2012; Sung, Chang, & Yang, 2015) by providing means for immediate interaction and communication between teachers and students (Al-Emran & Shaalan, 2015; Fong 2013). The mobile devices also cater for multiple modes of content representation and access with different visual, audio and kinesthetic functionalities (MacCallum, Day, Skelton, & Verhaart, 2017). Although these features of mobile devices are attractive for teachers and students, they also have some caveats as small screens, limited memory and limited battery life (Cheon, Lee, Crooks & Song, 2012; Picek & Grčić, 2013). Various devices are reported in the literature about mobile learning; mobile devices that are used in mobile learning research include handheld devices like mobile and smart phones, tablets, PDAs, digital audio players, electronic dictionaries, e-book readers, handheld game consoles, laptops, videoconferencing devices and wearable devices like ear phones and e-watches (Al-Emran & Shaalan, 2015; Baran, 2014; Erkollar & Oberer, 2012; Fu & Hwang, 2018; Gikas & Grant, 2013; Grant, 2019; Pegrum et al., 2013; Sung et al., 2015).

Although there are quite a few limitations to mobile learning such as lack of theoretical and pedagogical underpinnings, sustainable integration into formal educational contexts, and lack of teacher support and training; since mobile devices are affordable and available, they have become mainstream among a wide range of age groups, and also serious investment has been made to provide infrastructure, content, and resources related to the integration of mobile devices into learning environments (Baran, 2014). The fields that mobile learning research covers are manifold. In their meta-analysis Sung, Chang and Liu (2016) have shown that the research on mobile learning range from science to social studies, math, language arts, psychology, health-care, education, engineering, computer and information technology; in addition, the research on mobile leaning has been conducted in many learning environments like kindergarten, elementary school, middle school, high school and higher education. Fu & Hwang (2018) have found out that intention of use, learning perception, learning performance (cognitive), collaboration or communication, satisfaction or interest, cause and effect analysis, attitude, motivation and anticipation of effort, learning behavior and engagement, higher order skills, learning performance, self-efficacy, confidence, cognitive load and learning anxiety have been among the measurement issues in mobile learning research. Grant et al. (2015) have exemplified in-class uses of mobile devices as sets or carts to be delivered by the teachers in times of activities. Students collaborated with peers, created knowledge and enjoyed help from peers, online resources and also their teachers. Grant (2019) postulates that in informal learning, mobile learners can be physically and socially separated from peers and teachers.

Chee at al. (2017) posits that using mobile devices in various learning environments may effectively enhance students' learning knowledge. In their research, Sung et al. (2016) have concluded that learning with mobiles is significantly more efficient than learning with pen-and-paper or desktop computers, learning achievement was higher in younger learners, and it was possible to implement inquiry-based learning, cooperation, game based learning, problem-solving, lectures, self-directed study and formative assessment with mobile learning. Bano et al. (2018) confirm these findings by asserting that collaborative learning, followed by inquiry-based learning (IBL), and project and problem-based learning were the most frequently reported pedagogical approaches researched in the 49 studies they reviewed conducted between 2003 – 2016. They have also described that most of the research studies they reported on mobile learning were conducted in formal settings such as school mathematics classrooms and science laboratories. In their analysis they also observed that two types of apps or technologies were used as research variable in mobile learning; these are either self-developed customized apps (%59) or third-party commercial apps.

Since the use of mobile device highly increased in recent years, the students' mobile device usage and preferences are examined in the literature. Nikolopoulou (2018) presents that 83% of the students in her study reported they go online via their mobile device several times per day. Learners are reported to be using mobile devices for many activities when these devices are allowed in the classroom; among which are accessing information via the Internet, creating, editing, manipulating, or managing photos and/or videos and sending audio, video, or photo files, communicating with peers via sms or calls, exchanging ideas, and also learning new skills, drawing, playing games, taking notes, sharing in class activities, using in group activities, looking up an online dictionary, taking quizzes, using maps, reading e-textbook or e-books (Bartholomew & Reeve, 2018; Kim & Jang, 2015; Santos, Bocheco, & Habak 2018). According to Bartholomew and Reeve (2018), 81% of learners use mobile devices to send audio, video, or photo files to their peers and 80% to access information via the Internet which is also confirmed in Kim and Jang's (2015) study where 38% of the learners responded that the activity they used the mobile devices most was searching Internet for information. Moreover, students express positive perceptions indicating mobile learning acceptance, over 80% of the students agree and strongly agree with using mobile devices in the classroom (Nikolopoulou, 2018). Pruet, Ang and Farzin (2016) also found that both male and female learners had similar positive attitudes towards tablet computer use.

Students' use of mobile devices and mobile activity preferences are important in the design of effective mobile learning implementations. Mobile devices are accessible for children from early ages. However, the use of mobile devices for educational purposes requires a systematic design process. Designing mobile learning activities suitable for every age group and level can positively affect the learning process. At this point, examining the current use of mobile devices according to different levels of students can present important data in shaping the design processes. Designing mobile learning activities in accordance with the choices of students in daily life will positively affect their mobile learning acceptance. On the other hand, there are many studies examining the attitudes of students who participated in mobile learning activities towards mobile learning. Nonetheless, comparing students at different levels at the K12 level by determining their mobile learning attitude levels can provide important data in creating future plans. In this regard, the study sought answers to the following research questions:

1. What are the K12 students' mobile device usage preferences?
   a. Are there any significant differences in mobile device usage duration according to class level?

   b. Are there any significant differences in mobile device usage preferences according to class level?
2. What is the K12 students' attitudes level toward mobile learning?
   a. Are there any significant differences in attitudes toward mobile learning according to gender?
   b. Are there any significant differences in attitudes toward mobile learning according to class level?

METHODOLOGY

In this study, causal-comparative method was used. In causal-comparative research, the aim is to determine the cause or consequences of differences that already exist between or among groups of individuals (Frankel, Wallen & Hyun, 2012). In this direction, this study compares K12 students' preferences and attitudes on mobile learning.

PARTICIPANTTS

The sample of the study are 236 students (127 females, 109 males) at K12 level. The students are enrolled in primary (n=104), secondary (n=77), and high school (n=55) levels in schools. 196 of the students have their own mobile device, and others use their family members' mobile devices. They mostly use their mobile devices 1-3 hours in a day. The demographic information of the students is given in Table 1.

Table 1. *Demographic Information of the Students in the Sample*

		N	%
Gender	Female	127	53.8
	Male	109	46.2
Class level	Primary	104	44.1
	Secondary	77	32.6
	High School	55	23.3
Owning mobile device	No	40	16.9
	Yes	196	83.1
The mobile device(s) they have	Tablet	72	30.5
	Smartphone	70	29.7
	Tablet and smartphone	56	23.8
Using their family members' mobile devices	No	169	71.6
	Yes	67	28.4
Daily tablet / smartphone usage	Never	8	3.4
	Less than 1 hour	62	26.3
	1-3 hours	125	53.0
	4-5 hours	31	13.1
	More than 6 hours	10	4.2

PROCEDURES

The data in the study were collected by the teachers who attended a European Union project Bootcamp Training in Istanbul, Turkey. The math, classroom and English language teachers participated into a Bootcamp training within the scope of a European Union project called TABLIO (www.tablio.eu). In this Bootcamp, the training on tablet use in education, differentiation, pedagogical and technical design principles, educational mobile

application examples, teaching design process were presented and good examples of differentiation realized by other project partners were shared with the teachers. Thus, the teachers gained knowledge and experience towards designing mobile learning activities and applied these kind of activities in their classes during two weeks. At the end of the activities, they collected data from their students via a questionnaire. The students answered the questions based on their mobile learning experience that they gained during these activities conducted in and out of the class and via their personal mobile device usages. The necessary permissions were taken from the related institutions. The participants and their parents were informed with consent forms and they approved to participate in the research.

DATA COLLECTION TOOL

The data in the study were collected through a questionnaire developed by the researchers based on the previous studies (Kim & Jang, 2015; Nikolopoulou, 2018; Pruet et al., 2016; Santos et al., 2018). In the first part of the questionnaire, there are questions such as filling in multiple-choice questions in order to determine the usage and preferences of students in their daily lives. In the second part, there are 16 items in four sub-dimensions as 5-point Likert questions ranging from strongly disagree (1) to strongly agree (5) to determine students' attitudes towards mobile learning. Each sub-dimension includes four questions. The sub-dimensions are; ease of use (Davis, 1989), satisfaction with use (DeLone & McLean, 1992; Woszczynski et al., 2002), perceived usefulness (Davis, 1989), and desire for learning. The questionnaire is presented in the appendix.

DATA ANALYSIS

In the study, the descriptive, chi-square test of homogeneity, independent sample t-test and ANOVA statistical methods were used. To check the normality of the distribution, the skewness and kurtosis values were utilized. It was seen that the skewness values met the less than + 1 and more than -1, which is the assumption of normality (Morgan, Leech, Gloeckner, & Barrett, 2004). The assumptions of the ANOVA test were checked for the factors of the mobile learning attitude scale. The variance for each factor emerged to be equal. All assumptions of ANOVA were met (Field, 2009; Pallant, 2007). Tukey post-hoc test was used to interpret the differences between the groups.

FINDINGS

In the findings, the students' mobile device usage preferences are presented with descriptive statistics. The differences in mobile device usage duration and preferences according to class level (primary, secondary, and high school) have been revealed. Moreover, the students' attitudes toward mobile learning is compared according to their gender and class level.

STUDENTS' MOBILE DEVICE USAGE PREFERENCES

Students' mobile device usage preferences are presented in Table 2. Watching videos, playing music, playing games, taking a picture, accessing the Internet, sending/receiving instant messages are the most common uses of mobile devices for the students. Creating QR codes, sending/receiving tweets, post audios online, sending/receiving e-mails, scanning QR codes, recording audios are the less common uses of mobile devices for the students.

Table 2. *Students' Mobile Device Usage Preferences*

	Yes		No	
	N	%	N	%
watch videos	220	93.2	16	6.8
play music	207	87.7	29	12.3
play games	201	85.2	35	14.8
take a picture	174	73.7	62	26.3
access the Internet	150	63.6	86	36.4
send/receive instant messages	143	60.6	93	39.4
use calculator	135	57.2	101	42.8
use clock/alarm/timer	127	53.8	109	46.2
record videos	127	53.8	109	46.2
use calendar	109	46.2	127	53.8
use a social networking site (Facebook, YouTube etc.)	118	50	118	50
download and use apps	104	44.1	132	55.9
post a picture online	80	33.9	156	66.1
post a video online	75	31.8	161	68.2
record audios	71	30.1	165	69.9
scan QR codes	62	26.3	174	73.7
send/receive emails	54	22.9	182	77.1
post audios online	41	17.4	195	82.6
send/receive tweets	24	10.2	212	89.8
create QR codes	12	5.1	224	94.9

DIFFERENCES IN MOBILE DEVICE USAGE DURATION BY CLASS LEVEL

The students' daily mobile device usage duration is compared according to their class level. Never and more than six-hours' usage categories are excluded in chi-square analysis because the frequency count for each cell of the table is not more than five in these categories. Based on the analysis results, there is a significant difference for mobile device usage duration according to class level (χ^2 =34.24, df=4, $p < .001$). As seen in Table 3, while high school students use their mobile devices for a long time, primary school students use them for a shorter time within the day. Most of the students at each level use their mobile devices for 1-3 hours within a day.

Table 3. *Differences in Mobile Device Usage Duration according to Class Level*

Mobile Device Usage	Primary (n=104)	Secondary (n=77)	High School (n=55)
Never	5 (%4.8)	1 (%1.3)	2 (%3.6)
Less than 1 hour	41 (%39.4)	13 (%16.9)	8 (%14.5)
1-3 hours	51 (%49.09	48 (%62.3)	26 (%47.3)
4-5 hours	4 (%3.8)	10 (%13)	17 (%30.9)
More than 6 hours	3 (%2.9)	5 (%6.5)	2 (%3.6)

DIFFERENCES IN MOBILE DEVICE USAGE PREFERENCES BY CLASS LEVEL

The students' mobile device usage preferences are compared according to class level. The significant differences are given in Table 4. As seen in Table 4, the main differences occurred in accessing the Internet, sending/receiving instant messages, using social network sites, post picture online, sending/receiving emails and tweets.

Table 4. *Differences in Mobile Device Usage Preferences according to Class Level*

	n						χ^2	**p**
	Primary		**Secondary**		**High school**			
	Yes	**No**	**Yes**	**No**	**Yes**	**No**		
access the Internet	54	50	53	24	43	12	12.081	.002
send/receive instant messages	46	58	53	24	44	11	22.525	<.001
use calculator	52	52	44	33	39	16	6.425	.040
use clock/alarm/timer	42	62	49	28	36	19	13.534	.001
record videos	50	54	38	39	39	16	8.461	.015
use social networking sites	29	75	47	30	42	13	39.390	<.001
post a picture online	22	82	28	49	30	25	18.211	<.001
scan QR codes	25	79	14	63	23	32	9.732	.008
send/receive emails	9	95	26	51	19	36	21.341	<.001
send/receive tweets	1	103	13	64	10	45	17.317	<.001

STUDENTS' ATTITUDES TOWARDS MOBILE LEARNING

The students' attitudes towards mobile learning and sub-factors of the attitude are given in Table 5. The students' attitudes towards mobile learning is highly positive (M=4.18, SD=.58). Their perceived ease of use is high for mobile devices (M=4.28, SD=.67). They are satisfied with the use of mobile learning (M=4.46, SD=.59). Their perceived usefulness is high for mobile learning (M=3.99, SD=.90). Their desiring for learning is also at a high level (M=3.96, SD=.86).

Table 5. *Students' Attitudes towards Mobile Learning*

	M	**SD**
Mobile learning attitude	**4.18**	**.58**
Ease of use	4.28	.67
Satisfaction with use	4.46	.59
Perceived usefulness	3.99	.90
Desire for learning	3.96	.86

DIFFERENCE IN ATTITUDES TOWARDS MOBILE LEARNING BY GENDER

The students' attitude towards mobile learning is compared according to gender. As in Table 6 (see next page), there is only a significant difference in ease of use factor ($p < .05$). The male students' perceived ease of use towards mobile learning is higher than females. However, the effect size is medium (d =0.30).

Table 6. *Differences in Attitudes towards Mobile Learning according to Gender*

	Gender	M	SD	*t*	*p*
Ease of use	Female	4.19	.727	-2.317	.019*
	Male	4.39	.585		
Satisfaction with use	Female	4.48	.594	-1.612	.722
	Male	4.45	.597		
Perceived usefulness	Female	4.02	.856	-3.100	.623
	Male	3.96	.958		
Desire for learning	Female	3.90	.581	-3.100	.222
	Male	4.03	.578		

p < 0.05

DIFFERENCE IN ATTITUDES TOWARDS MOBILE LEARNING BY CLASS LEVEL

The students' attitudes towards mobile learning is compared according to their class level. As in Table 7, there are significant differences in mobile learning attitude (F=6.248, p < .05), and ease of use (F=5.906, p < .05) and desire for learning (F=10.428; p < .05) sub-factors. The effect size is approximately medium for mobile learning attitude, ease of use (f=0.23), and desire for learning (f =0.30).

Table 7. *Differences in Attitudes towards Mobile Learning according to Class Level*

Dependent Variables	**Sum of Squares**	**df**	**F**	**p**
Mobile Learning Attitude	78.589	2	6.248	.002*
Ease of use	105.915	2	5.906	.003*
Satisfaction with use	82.891	2	.398	.672
Perceived usefulness	191.539	2	2.045	.132
Desire for learning	173.899	2	10.428	<.001*

p < 0.05

Post-hoc tests were conducted for each dependent variable (Table 8). According to Tukey test results, the high school students' attitude towards mobile learning is significantly more positive than primary school students. The secondary and high school students' perceived ease of use is higher than primary school students. Moreover, the high school students' desire for learning is higher than primary and secondary school students in mobile learning environments.

Table 8. *Post hoc Results*

	Class level	**M**	**Primary**	**Secondary**	**High School**
Mobile Learning Attitude	Primary	4.04	-	-	.002*
	Secondary	4.22		-	.-
	High School	4.36	.002*		-
Ease of use	Primary	4.11		.011*	.015*
	Secondary	4.40	.011*	-	-
	High School	4.42	.015*	-	-
Desire for learning	Primary	3.76	-	-	<.001*
	Secondary	3.94		-	.008*
	High School	4.39	.000*	.008*	-

According to the results, watching videos, playing music, playing games, taking a picture, accessing the Internet, sending/receiving instant messages are the most common uses of mobile devices for the students. There is a significant difference for mobile device usage duration according to class level. While high school students use their mobile devices for a long time, primary school students use them for a shorter time within the day. The students' attitudes towards mobile learning is highly positive. The male students' perceived ease of use towards mobile learning is higher than females. The secondary and high school students' perceived ease of use is higher than primary school students. Moreover, the high school students' desire for learning is higher than primary and secondary school students in mobile learning environments.

DISCUSSION

In this study, students' mobile device usage preferences and mobile learning attitudes were examined in detail in terms of class level and gender. Almost all of the students stated that they use their mobile devices for watching videos. As a matter of fact, these days students watch videos on social media platforms, especially on YouTube, and spend most of their time on the internet on these platforms (Martin, Wang, Petty, Wang, & Wilkins, 2018). In addition, playing music, playing games, taking pictures, accessing Internet, sending / receiving instant messages are also prominent uses. Individuals realize such activities with mobile devices to spend good time in their daily lives. Designing mobile learning activities by considering students' mobile device usage behaviors may enable them to be more active in this process. Creating QR codes, sending / receiving tweets, post audios online, sending / receiving e-mails, scanning QR codes, recording audios are the less common uses of mobile devices for the students. From these results, it is understood that students carry out more consumption-based activities with mobile devices and not enough production-based activities. Accordingly, it is stated in the literature that students carry out consumption-based activities (Lu, Hao, & Jing, 2016). On the other hand, when students are allowed to use mobile devices in the classroom, they engage in more production-based activities such as creating, editing, manipulating, or managing (Bartholomew & Reeve, 2018; Kim & Jang, 2015; Santos et al., 2018). When mobile device usage time is analyzed at the classroom level, it is determined that primary and secondary school students spend less time using their mobile devices on daily basis and high school students use them for a longer period of time. This situation is thought to be due to the fact that parents limit the time of mobile device usage with their young children. As a matter of fact, it is recommended to keep the screen time for young children shorter (Hale & Guan, 2015). The differences in mobile device usage preferences according to the class level occurred especially in activities that are done on the Internet such as accessing the Internet, sending / receiving instant messages, e-mails and tweets, using social networking sites, posting a picture online. This could be caused by the restrictions the families apply on the Internet applications for primary and secondary school students. Applications carried out over the Internet require skills for safe Internet usage. For this reason, it is required for the families to take precautions for their children against harm that may arise from the Internet environment (Moreno, Egan, Bare, Young, & Cox, 2013).

Students' attitudes towards mobile learning have been found to be very positive. In parallel with the literature, ease of use, satisfaction with use, perceived usefulness and desire for learning are found to be high in mobile learning activities (Kim & Jang, 2015; Nikolopoulou, 2018; Pruet et al. 2016). Although there is a significant difference in the attitude towards mobile learning by gender, its effect level is medium. This difference emerged in favor of male students in the ease of use dimension. In the literature, there are parallel (Bao, Xiong, Hu, & Kibelloh, 2013; Okazaki & Renda dos Santos, 2012) and opposite results (Al-Emran, Elsherif, & Shaalan, 2016; Liaw & Huang, 2015). There was

a significant difference in attitude towards mobile learning according to class levels. These differences emerged especially in favor of high school students in terms of ease of use and desire for learning. Secondary school students' attitudes are also more positive than primary students. This may be related to the high school students' rapid adaptation to the activities carried out in the lessons due to the greater experience of using mobile devices. Students at primary level may not be able to cope with the problems they face individually while using mobile devices. Recent research has shown that in the classrooms where the digital devices are used only by teachers provide better learning rather than students' use (Bryant, Child, Dorn, & Hall, 2020). On the other hand, given the fact that today's students frequently use mobile devices in their daily lives, it becomes more important to focus on designing mobile learning activities that will enable students to learn effectively and efficiently in the classroom.

CONCLUSION

As a result, this study presented important data in providing better understanding of the current situation by comparing mobile device usage and experiences of students at different grade levels in K12. However, that the study was carried out with a limited number of students at different educational levels may be seen as a limitation. In the light of the results obtained from the study, videos and educational games can be used more in mobile learning activities in parallel with students' mobile device usage behavior. Activities for creating their own video content can be designed both with the videos designed by the teachers and with the mobile devices of the students during the learning process. In addition, such applications as designing educational games compatible with mobile devices can be given more space. Activities can be designed for students to assume productive roles using their mobile devices. They can create educational contents through their mobile devices and mobile apps. Innovative mobile applications such as mobile augmented reality (mAR) can be expanded. The students can be urged to develop educational contents through mobile apps. While mobile learning activities are carried out especially with primary and secondary school students, collaboration with parents can enable students to use their educational mobile devices under the supervision of their parents. In this way, students' longer screen time may be prevented, and secure Internet usage can be provided. Internet-based mobile applications are more preferable for high school students. However, the applications that work offline at primary and secondary level can be given more space. Female students may need more guidance on using mobile devices. In addition, precautions should be taken against the problems that students may encounter while using mobile devices in primary and secondary levels. Since classroom management problems can occur at these levels as well, designing extracurricular activities can also be considered. In future research, studies on learning outcomes can be carried out with larger samples. The process can be examined in more detail with qualitative and mixed method studies. Mobile learning applications can be realized in different cultures and contexts, and the results can be compared.

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APPENDIX. Questionnaire

Dear Students,
This study is carried out to find out your mobile devices usage and your thoughts about mobile learning. Answering the questions sincerely is very important in terms of obtaining reliable information as a result of the research. There are no right or wrong answers to the questions. Please do not leave any questions unanswered. When answering, tick the option (s) that best reflects your opinion across each statement. Your answers will be kept strictly confidential and will only be used for scientific research. If you would like information about the study, you can contact us. Thank you for your contribution.

Section 1: Demographic Questions

1. Gender: ( ) Female ( ) Male
2. Age:
3. School:
4. Grade level:
5. In which course did you use mobile device?
6. Do you have your own mobile device? ( ) No ( ) Yes
   a. If Yes; what type of mobile device do you use ( ) Smartphone ( ) Tablet
   b. If No;
      i. Do you use your family members' mobile devices? ( ) No ( ) Yes
      ii. Do you want to have a mobile device? ( ) No ( ) Yes
7. What are the tool(s) you have access to the Internet? (You can select more than one option):
   ( ) Computer ( ) Tablet ( ) Smartphone
   ( ) Other
8. Your average daily tablet / smartphone usage is:
   ( ) Never ( ) Less than 1 hour ( ) 1-3 hours ( ) 4-5 hours
   ( ) More than 6 hours
9. Do you have social media accounts?
   ( ) No ( ) Facebook ( ) Instagram ( ) Twitter ( ) YouTube
   ( ) Other
10. What do you do with a mobile device? (Check all that apply).

( ) send/receive instant messages	( ) watch videos	( ) use calendar
( ) send/receive emails	( ) post a video online	( ) use calculator
( ) send/receive tweets	( ) record audios	( ) record videos
( ) access the Internet	( ) take a picture	( ) download and use apps

( ) post audios online   ( ) play music   ( ) scan QR codes

( ) post a picture online   ( ) play games   ( ) create QR codes

( ) use a social networking site (Facebook, YouTube etc.)   ( ) use clock /alarm/timer

Section 2: Opinions on Mobile Learning Activities

This section is designed to determine your thoughts about the activities you perform with your mobile devices (smartphone / tablet). For each of the items below, please rate how much you have joined or disagreed with the use of mobile devices in 1: Strongly Disagree and 5: Strongly Agree.

	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	My interaction with mobile device was clear and understandable.	1	2	3	4	5
2	It was easy for me to become skillful at using mobile device.	1	2	3	4	5
3	Learning to operate mobile devices was easy for me.	1	2	3	4	5
4	I found it easy to get mobile devices to do what I wanted them to do.	1	2	3	4	5
5	I liked using the mobile device.	1	2	3	4	5
6	I was very satisfied with using the mobile device.	1	2	3	4	5
7	Using the mobile device helped me study.	1	2	3	4	5
8	It was fun when I used the mobile device in studying.	1	2	3	4	5
9	I liked studying in class with mobile device.	1	2	3	4	5
10	I found mobile devices useful in class.	1	2	3	4	5
11	I found mobile devices useful outside class.	1	2	3	4	5
12	Using mobile devices in class improved my performance in class.	1	2	3	4	5
13	I found what I was interested in by using mobile devices.	1	2	3	4	5
14	I asked my friends questions and got answers from them using mobile devices.	1	2	3	4	5
15	I searched for more information to understand what my teacher taught using mobile devices.	1	2	3	4	5