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Examination of Middle School Mathematics Teachers' Experiences of Using a Smart Phone

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Abstract

The purpose of this study is to reveal middle school mathematics teachers' experiences of using a smart phone. In the study, survey method was used. The study was carried out with 105 middle school mathematics teachers. As a data collection tool, a survey that consists of two sections was used. Percentages and frequencies were used in terms of analysis of the data. In addition, direct quotations from the opinions of teachers regarding their answers to questions in the survey were included. As a result of the study, it was determined that majority of the teachers use smart phones every day, have a good level of smart phones usage competencies, have been using smart phones at least for three years, and that they desire to improve themselves on using smart phones. In addition, it was revealed that a considerable number of teachers think that smart phones affect social life partially positive, believe that smart phones contribute to professional development positively, think that smart phones have advantages and disadvantages at an equal rate and experience difficulties in terms of running out of battery. Lastly, it was determined that considerable majority of the teachers use smart phones at least for an hour per day, use smart phones in the evenings mostly, learn how to use smart phones on their own, follow the developments related to smart phones and use smart phones mostly for taking pictures and to display them. In-service training activities for teachers can be organized by the Ministry of National Education on how to use smart phones more effectively.

Keywords: Middle school mathematics teachers, Smart phone, Teachers' use of a smart phone, Mobile technology.

1. Introduction

Technology is generally used as a general concept that includes all the technologies that people develop and use in their daily lives (Çepni, Ayvacı, & Bacanak, 2004). With the development of technology, significant changes have occurred in many tools and materials. One of these tools is the mobile phones that have become an important part of our lives. People first used mobile phones that were heavy and did not have much feature. The features of mobile phones have gradually increased with the advancement of technology. Smart phones have been formed through the development of mobile phones today's technology.

The smart phone is a mobile communication device designed with the addition of the features of Personal Digital Assistants which is a product of the computer world to the classic features provided by the mobile phone (Kaya, 2018). In addition to the features provided by ordinary mobile phones, smart phones can perform most of the operations that computers can do through mobile operating systems (Ada & Tatlı, 2013). The ease of use and the availability of many programs and applications that make life easier cause the widespread use of smart phones (Altundağ & Bulut, 2017). The fact that smart phones have many important features such as talk, messaging, camera, internet, use of social media, flashlight, calculator, notepad has recently made these devices quite attractive (Yusufoğlu, 2017). These features have led to the use of smart phones in almost every household.

Since the use of smart phones is generally evaluated in mobile phone usage, it is useful to divide the concept of mobile phone into two as "simple mobile phone" and "smart phone" (Çakır & Demir, 2014). Simple mobile phones are devices only for messaging and phone calls, while smart phones are smart devices with operating systems that function as computers (Minaz & Çetinkaya-Bozkurt, 2017).

According to statistics of "Household Information Technology Usage Survey" belongs to month of April 2016 by the Turkish Statistical Institute (TSI), there are mobile phone or smart phone in 96.9% of households (TSI, 2016). This finding shows that the use of mobile phones or smart phones has increased compared to 96.8% value of the year 2015 (TSI, 2015).

According to the results of "Deloitte Global Mobile Costumer Survey" which performed every year with the participation of many countries since 2012, it was determined in Turkey that smart phone usage was 67.0% in 2013, 86.0% in 2015, and 92.0% in 2017 (Deloitte, 2013, 2015, 2017). These findings indicate that smart phone usage has been increasing in recent years.

The change and development in informatics are is also experienced in smart phone technology. People may now have to use smart phones in their work, education and daily lives. For this reason, smart phones are widely used by people of different age groups (Doğan & İlçin-Tosun, 2016; Park, Nam, & Cha, 2012; Şenel, 2016). Considering that there are individuals in the educational community among the people who use smart phones, it can be said that teachers have an important place among these individuals. The increasing use of smart phones among people has also raised the need to work on the effects of these devices on teachers. Besides, it is also an important issue from the sociological point of view to reveal the experiences of teachers on smart phones who shape future generations. For this reason, it is aimed to reveal the smart phone use experiences of mathematics teachers working in middle school in the current research. Current research will be guiding and informative for smart phone manufacturers and users towards teachers' use of smart phones. It is also considered that this study will be the basis of and will shed light on new studies through the changes such as adding new questions to the questionnaire used in the study and changing the sample.

2. Method

The survey method was used in the study. Survey studies are the researches that aim to collect data to determine certain characteristics of a group (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2010). This method has been preferred in the present study since the object, event or individual that subjected to the study can be tried to be described as it is, and it can be studied on whole of the universe or a sample taken from it (Karasar, 2007).

2.1. Sampling

Criterion sampling method was used in this study. Individuals in the sample were selected according to the criteria of "working in a middle school and having a smart phone". The sample of the study consists of 105 middle school mathematics teachers working in public schools in the fall semester of 2017-2018 academic years. The teachers in the sample were subjected to the "Experiential Questionnaire on the Use of Smart Phones". Some demographic characteristics related to teachers obtained through surveys are presented in the tables below. Gender distributions of teachers are given in Table 1:

Table 1. Gender distributions of teachers

	f	%
Female	73	69.5
Male	32	30.5

When Table 1 is examined, it is seen that most of the teachers are female. The age ranges of teachers are presented in Table 2:

Table 2. The age ranges of teachers

	f	%
20-25	10	9.5
26-30	11	10.5
31-35	15	14.3
36 or more	69	65.7

When Table 2 examined, it is understood that a significant proportion of teachers are at least 36 years old. The service years of teachers are given in Table 3:

Table 3. Service years of teachers

	f	%
0-5	18	17.1
6-10	11	10.5
11-15	25	23.8
16-20	15	14.3
21 or more	33	31.4
Absent/No respond	3	2.9

When Table 3 is examined, it is seen that most of the teachers have at least 11 years of experience. The titles of the teachers are presented in Table 4:

Table 4. The titles of teachers

	f	%
Intern teacher	10	9.5
Teacher	77	73.3
Expert Teacher	16	15.2
Absent/No respond	2	1.9

When the Table 4 examined, it is understood that the number of intern and expert teachers is not much. The education levels of teachers are given in Table 5:

Table 5. Education levels of teachers

	f	%
Institute of Education (3 years)	3	2.9
Faculty of Education	71	67.6
Faculty of Arts and Sciences	20	19.0
M.D.	9	8.6
Ph.D.	0	0.0
Absent/No respond	2	1.9

When Table 5 is examined, it is seen that most of the teachers are graduates of education faculties. English language levels of teachers are presented in Table 6:

Table 6. English language levels of teachers

	f	%
Very weak	22	21.0
Weak	25	23.8
Moderate	30	28.6
Good	8	7.6
Very good	6	5.7
Absent/No respond	14	13.3

When Table 6 is examined, it is understood that more than half of the teachers have English language levels at moderate or lower levels.

2.2. Development and Implementation of Data Collection Tool

The "Experiential Questionnaire on the Use of Smart Phones" was developed by the researcher to determine the experience of using middle school mathematics teachers' smart phones. The questionnaire consists of two parts. In the first part of the questionnaire, there are 6 questions about the demographic characteristics of the teachers and 13 questions about the smart phone usage in the second part. Under these 13 questions, gaps were also left to allow teachers to write down their views on their answers to the questions. The studies in the literature were benefited during the question formation in the questionnaire (Balcı, Gölcü, & Öcalan, 2013; Çakır & Demir, 2014; Subramanian, 2009; Yaşar, 2013) and the opinions of two experts were taken. In addition, 50 teachers read the questions in the questionnaire during pilot application and the researcher made corrections on the issues that were not understood at the end of this reading process. Furthermore, two Turkish teachers were asked whether the questions were understandable or not, and then the questions were formed in their final version. The questionnaire was applied to the teachers during break times or during the free hours of the teachers.

2.3. Data Analysis

The data were analyzed by using descriptive analysis method. First, the data in the surveys were entered in the Excel table. Then, the frequency and percentage values were

calculated for the answers given by the teachers to the questionnaire. The findings are presented in tables. Direct quotations from teachers' answers are given under the tables. Since some of the questions in the questionnaire can be answered more than once, the total of the percentage values in some tables may exceed 100.0%. Besides, since some questions may not be answered by teachers and some questions may be marked by multiple choices, the total number of frequencies may be different from the total number of teachers.

3. Results

The frequencies of teachers' use of smart phones are given in Table 7:

Table 7. Frequencies of teacher's use of smart phones

	f	%
Everyday	74	70.5
Almost everyday	18	17.1
Several days a week	5	4.8
Several days per month	3	2.9
Never	3	2.9
Absent/No respond	2	1.9

When Table 7 considered, it is understood that the most of teachers use smart phone in "every day". Examples of teachers' statements towards the frequencies of smart phones use are as follows:

"K6: I use my smart phone every day to communicate with my friends on Facebook."
"K19: I use my smart phone every day to text on WhatsApp."
"K21: I use a smart phone every day to have call with my family."

Competencies of teachers on smart phones use are presented in Table 8:

Table 8. Competencies of teachers on smart phone use

	f	%
Very weak	3	2.9
Weak	6	5.7
Medium	30	28.6
Good	49	46.7
Very good	14	13.3
Absent/No respond	3	2.9

When Table 8 is examined, it is seen that teachers more consider themselves as "good" level in smart phone usage competency. Examples of teachers' competencies for using a smart phone are as follows:

"K4: The phone use competency of someone using a phone every day is already good."
"K8: I think my phone usage is good. Generally, when I encounter a problem, I can solve it myself."
"K13: I can use the applications on phone in a good way."

The frequency of whether the teachers want to improve themselves on smart phone use is presented in Table 9:

Table 9. The frequency of whether the teachers want to improve themselves on smart phone use

	f	%
Yes	53	50.5
No	47	44.8
Absent/No respond	5	4.8

When Table 9 examined, it is understood that most of the teachers want to improve themselves with the use of smart phones. Examples of teachers' expressions about whether they want to improve themselves in terms of using smart phones are as follows:

"K9: I want to improve myself because smart phones are developing as technology evolves and new features are added to smart phones. I want to improve myself to learn these features."
"K14: I don't want to improve myself because I think I can use smart phones enough."
"K17: Smart phones have many functions that make our daily life easier. I would like to improve myself to make more use of these facilities."

The opinions of teachers about the effects of smart phones on social life are presented in Table 10:

Table 10. The effects of smart phones on social life

	f	%
Negative effects	4	3.8
Partially negative effects	26	24.8
Non-effective	25	23.8
Partially positive effects	33	31.4
Positive effects	16	15.2
Absent/No respond	1	1.0

When Table 10 is examined, it is seen that approximately one third of the teachers stated that smart phones are "partially positive effects" on their social life of. Examples from the sentences of the teachers about the impacts on social life of smart phones are as follows:

"K1: Smart phones have partially positive effects on social media to communicate with people."
"K15: Does not affect social life because the smart phone is different, my social life is different."
"K38: Affects social life positively because it allows me to reach too many people quickly. It helps me to have information about different people"

According to the teachers, the effects of the smart phone on professional life are presented in Table 11:

Table 11. The effects of the smart phone on professional life

	f	%
I think that it definitely doesn't contribute.	10	9.5
I think it doesn't contribute.	20	19.0
I think it contributes.	57	54.3
I think that it definitely contributes.	11	10.5
No idea.	5	4.8
Absent/No respond	2	1.9

When Table 11 is examined, it is seen that a significant number of teachers think that smart phones have a positive contribution to their professional development. Examples from the teachers' sentences for the impact of smart phones on professional development are as follows:

"K3: I can do my research fast and at that moment. Since my access to information is fast, it is definitely useful for my professional development."
"K10: I think the contribution to our professional education is also positive in order to follow the developing technology."
"K27: I think that some programs that can be installed on smart phones have improved professional development."
"K55: I don't think it has anything to do with my professional development."

The durations of smart phone uses for teachers are presented in Table 12:

Table 12. The durations of smart phone uses by teachers

	f	%
Less than one year	7	6.7
1-2 years	23	21.9
3-4 years	42	40.0
5-6 years	21	20.0
More than 7 years	7	6.7
Absent/No respond	5	4.8

When Table 12 examined, it is understood that 66.7% of teachers use smart phones for "at least 3 years". Examples from the statements of the teachers about the durations of smart phones use are as follows:

"K5: I got my phone when I started to college. So, I've been using the smart phone for 8 years."
"K8: I've been using smart phones for about 7-8 years."
"K14: It's been 5-6 years since I started using the smart phone."

The durations of daily use of smart phones by teachers are presented in Table 13:

Table 13. The durations of daily use of smart phones by teachers

	f	%
Less than 1 hour	38	36.2
1-2 hours	43	41.0
3-4 hours	12	11.4
5-6 hours	6	5.7
More than 7 hours	2	1.9
Absent/No respond	4	3.8

When Table 13 examined, it is understood that 60.0% of teachers use smart phones at least one hour per day. Examples from the statements of teachers regarding the durations of daily use of smart phones are as follows:

"K1: Social media, search, messaging. 3-4 hours spends for these."
"K3: I spend 1 to 2 hours in a day on the phone, except for phone calls."
"K31: Sometimes it may be more than 5-6 hours. I use smart phone while studying."
"K39: I usually use my smart phone in my spare time. Sometimes I read books in electronic environment. It's like 7 hours in those times."
"K40: I spend most of the day through working. That's why I use the smart phone for 1 hour at most."

The times for teachers' uses of smart phones are presented in Table 14:

Table 14. The times for teachers' uses of smart phones

	f	%
Break times in school	6	5.7
After school	13	12.4
At night	61	58.1
In the evening	12	11.4
At weekends	2	1.9
In class when I need to search for something	4	3.8
Absent/No respond	7	6.7

When Table 14 is examined, it is seen that teachers mostly use their smart phones "in the evening". Examples from the teachers' sentences about the use of smart phones are as follows:

"K11: I use it in the evening because I have more free time in the evening."
"K15: It has been a habit to make surfing at night before going to bed. I can't sleep without doing."
. K19: After dinner, I use it to relax, to relieve fatigue."
"K50: I use in the class when I'm curious about something."

The teachers' learning ways of smart phone use are presented in Table 15:

Table 15. The teachers' learning ways of smart phone use

	f	%
By myself	87	82.9
From my family	20	19.0
From my friends	16	15.2
From my students	3	2.9

When Table 15 examined, it is understood that most teachers have learned to use the smart phone by themselves. Examples from the teacher's statements about learn ways to use smart phones are as follows:

"K3: I more learned smart phone by myself. I don't need much help."
"K9: I learned the smart phone on my own through using. I learned some of the features that I didn't know, from my friends and family."
"K44: I learned the smart phone through trial and error. Maybe I've asked my friends some things that I didn't know."

The frequencies of teachers to follow developments on smart phones are presented in Table 16:

Table 16. The frequencies of teachers to follow developments on smart phones

	f	%
Everyday	5	4.8
Almost everyday	13	12.4
Several times a week	16	15.2
Several times a month	18	17.1
Several times a year	23	21.9
Never	28	26.7
Absent/No respond	2	1.9

When Table 16 is examined, it is seen that approximately one third of the teachers follow the developments about smart phones. The examples from the teachers' sentences about the frequencies of following developments related to smart phones are as follows:

"K16: I try to keep developments about the smart phone even once a month."
"K24: I'm very interested in the smart phone. Therefore, I try to follow developments every day."
"K55: I look at smart phone developments several times in a month."
"K59: I'm not interested in the smart phone's software event, so I'm not following the developments."

The general opinions of teachers about the smart phone are presented in Table 17:

Table 17. The general opinions of teachers about the smart phone

	f	%
Very helpful	4	3.8
Helpful	43	41.0
Harmful	5	4.8
Very harmful	1	1.0
Equally helpful and harmful	48	45.7
Absent/No respond	4	3.8

When Table 17 examined, it is understood that most teachers' general opinions on the smart phone is "equally helpful and harmful". Examples from the teachers' statements about general opinions about smart phones are as follows:

"K29: Very useful who use it efficient."
"K32: I think both the loss and benefit is equal because if the person wants to use this tool very useful, the person can use it very useful or vice versa."
"K42: Both helpful and harmful because making research is easy. Communication is provided. But it is harmful when used other than its purpose especially for children."
"K48: I think it is very useful as long as it is used correctly. It is necessary to know how to use it right."

The problems that teachers face when using a smart phone are presented in Table 18:

Table 18. The problems that teachers face when using a smart phone

	f	%
Battery problems	60	57.1
Making addiction	42	40.0
Connection problems about internet	36	34.3
Spam	29	27.6
Personal security problems	27	25.7
Screen freeze	26	24.8
High internet fees	23	21.9
Foreign language problems	15	14.3
Storage problems	2	1.9
System errors	1	1.0

When Table 18 is examined, it is seen that teachers stated more problems due to "technical" features of smart phones. The examples from teachers' sentences towards the problems they encounter when using a smart phone:

"K6: It makes addiction because I use it actively."
"K18: There are certain problems after the phones have been used for a certain period. Especially the screen is freezing, and the battery gets low fast."
"K22: When the new version is released, the speed of the old version is decreasing. I have also a storage problem on my phone."
"K35: I don't understand some issues on the smart phone since I don't understand very good English."

The aims of teachers' use of smart phones are given in Table 19:

Table 19. The aims of teachers' use of smart phones

	Never		Rare		Sometimes		Usually		Always	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
1.To make research	7	6.7	14	13.3	33	31.4	39	37.1	12	11.4
2.For surfing	14	13.3	22	21.0	26	24.8	33	31.4	10	9.5
3.To make chat	27	25.7	18	17.1	18	17.1	32	30.5	10	9.5
4.To enter social sharing sites (facebook, twitter etc.)	12	11.4	17	16.2	14	13.3	39	37.1	23	21.9
5.To read materials such as books, newspapers or articles	7	6.7	15	14.3	33	31.4	37	35.2	13	12.4
6.To make an appointment with hospitals	23	21.9	31	29.5	27	25.7	9	8.6	15	14.3
7.To check the analyze results	47	44.8	30	28.6	16	15.2	5	4.8	7	6.7
8.To apply for examinations	28	26.7	20	19.0	25	23.8	18	17.1	14	13.3
9.For the application procedures	52	49.5	18	17.1	16	15.2	9	8.6	10	9.5
10.To learn the cooking recipe	34	32.4	11	10.5	18	17.1	33	31.4	9	8.6
11.To learn the wheatear forecast	9	8.6	19	18.1	24	22.9	37	35.2	16	15.2
12.To watch the TV	56	53.3	24	22.9	14	13.3	6	5.7	5	4.8
13.To make shopping	43	41.0	24	22.9	19	18.1	11	10.5	8	7.6
14.To download program, music, games or videos	24	22.9	27	25.7	25	23.8	20	19.0	9	8.6
15.For watching the film	46	43.8	30	28.6	16	15.2	8	7.6	5	4.8
16.To play the game	37	35.2	23	21.9	22	21.0	18	17.1	5	4.8
17.To listen to music	18	17.1	22	21.0	34	32.4	20	19.0	11	10.5
18.For distance learning	48	45.7	31	29.5	20	19.0	5	4.8	1	1.0
19.For electronic mail processing	26	24.8	15	14.3	21	20.0	26	24.8	17	16.2
20.For e-school operations	26	24.8	18	17.1	20	19.0	24	22.9	17	16.2
21.For online banking transactions	37	35.2	14	13.3	19	18.1	21	20.0	14	13.3
22.To make video talk	29	27.6	26	24.8	18	17.1	21	20.0	11	10.5
23.To watch educational videos	23	21.9	19	18.1	33	31.4	20	19.0	10	9.5
24.To translate to different languages or from different languages to Turkish.	38	36.2	17	16.2	28	26.7	14	13.3	8	7.6
25.To follow developments or innovations in the world	9	8.6	17	16.2	34	32.4	33	31.4	12	11.4
26.To communicate with people and share information at the same time	18	17.1	16	15.2	31	29.5	29	27.6	11	10.5
27.To take advantage of e-government facilities	26	24.8	24	22.9	31	29.5	16	15.2	8	7.6
28.To learn about trip or travel issues	18	17.1	21	20.0	35	33.3	18	17.1	13	12.4
29.To get tickets to transportation vehicles such as plane, bus etc.	30	28.6	22	21.0	29	27.6	15	14.3	9	8.6
30.To get tickets to entertainment environments such as cinema, theater and so on.	42	40.0	30	28.6	19	18.1	11	10.5	3	2.9
31.To monitor economy or stock market news	50	47.6	24	22.9	18	17.1	8	7.6	5	4.8
32.To take note	27	25.7	26	24.8	23	21.9	19	18.1	10	9.5
33.To record voice	31	29.5	24	22.9	26	24.8	17	16.2	7	6.7
34.To record Video	19	18.1	22	21.0	26	24.8	23	21.9	15	14.3
35.To take or view a photo	10	9.5	10	9.5	17	16.2	40	38.1	28	26.7
36.To share photos online	19	18.1	15	14.3	23	21.9	27	25.7	21	20.0
37.For tasks and other list management (calendar, etc.)	27	25.7	23	21.9	22	21.0	26	24.8	7	6.7
38.To use the calculator	16	15.2	19	18.1	32	30.5	27	25.7	11	10.5
39.To look at the map	21	20.0	26	24.8	33	31.4	17	16.2	8	7.6
40.Cheating during the exam	93	88,6	5	4.8	4	3.8	2	1.9	1	1.0

When Table 19 examined, it is understood that 88.6% of the teachers never use smart phones to make "cheating during the exam", 29.5% of them rarely use to get "appointments at the hospital" and "distance learning", 33.3% of them sometimes use to "get information about travel or travel matters issues", 38.1% of them use to "take or view photos", and 26.7% of them use to always "to take or view the photos". Examples from the teacher statements about the aim of smart phone use are as follows:

"K2: I always use the smart phone to take picture or view picture."
"K9: I never use the smart phone to make cheating."
"K18: I rarely use my smart phone to make appointments from hospitals."
"K21: I occasionally use it to get information about a trip or travel."
"K24: I rarely use it for distance learning."
"K26: I occasionally use it to make cheating in exams."

4. Discussion, Conclusion and Recommendations

The findings obtained from this study that conducted to determine the experiences of middle school mathematics teachers on the use of smart phones are discussed with the literature and presented below.

It was revealed that many teachers use smart phones every day. This shows that teachers live in with smart phone very close. In addition, most of the teachers have been using smart phones for at least three years and following the developments about smart phone. Accordingly, it is understood that the smart phones, which have become an indispensable element of daily life, have been adopted by teachers. Şenel (2016) determined that pre-service English teachers were seeing mobile phones as "a part of life". Therefore, it is understood that smart phones are an important device for teachers to do daily and professional work.

Nearly half of the teachers (46.7%) found themselves good sufficient at smart phone use. In addition, 37.2% of the teachers found themselves to be sufficient at medium level or below the intermediate level. There can be said that one of the main reasons why some teachers see themselves as low sufficient for smart phones is the rapidly changing and evolving technology. The English level of teachers may have generated a sense of their partial disability in the use of smart phones. Seminars or courses can be organized by the Ministry of National Education to increase the level of sufficiency on smart phone use of teachers who have low sufficiency at smart phones to better levels. In addition, in-service training activities can be organized for teachers who have a foreign language problem while using a smart phone.

Most of the teachers want to improve themselves in the use of smart phones. This situation can be caused by such reasons as “accessing information in a short and easy way, making life easier, and catching the innovations brought by the age” (Özkan, 2010). Teachers wanting to develop themselves on the use of smart phones can be considered as a situation that has emerged in line with these needs.

When the intensity of using smart phones considered, it is understood that 41.0% of the teachers use smart phones 1-2 hours a day. Yusufoğlu (2017) determined that a significant number of university students use their smart phone for 4-6 hours a day. Minaz and Çetinkaya-Bozkurt (2017) revealed that the duration of using smart phones was 2-6 hours per day for university students. The fact that almost half of the teachers use a smart phone for 1-2 hours per day may be an indication that participants do not spend much time with smart phones in general. When the most used smart phone times were examined, it was revealed that 58.1% of the teachers used smart phones in the evenings. This finding shows that teachers prefer to use smart phones in the evening after leaving school.

It has been determined that 82.9% of teachers have learned to use smart phones by themselves. From this finding, it was concluded that most of the teachers learned to use smart phones on their own. In addition, it was found that families were most likely to help teachers in learning smart phones and then their friends and students respectively. In this context, it is understood that teachers learned to use smart phones from their families, friends, and students other than their efforts.

It has been revealed that a significant number of teachers think that the benefit and harm of smart phones is equal. This shows that teachers are aware of the benefits of smart phones as well as their harms. It is gratifying that teachers who take on the education of future generations are conscious of the use of current technologies. Only teachers who are conscious smart phone users can raise conscious students (Altundağ & Bulut, 2017). Therefore, it is of utmost importance that teacher’s use of smart phones in a conscious and controlled manner to be a model for their students and to have a healthy communication with students.

The responds of teachers on how smart phones affect social life concentrate on “partially positive effects”. However, the number of teachers who stated that smart phones have a negative impact on social life is not few. It was determined that approximately one fourth of the teachers stated that smart phones affect social life as “negative” or “partially negative”. Having negative aspects in terms of social aspect in addition to the positive aspects of smart phones prepares the basis for some negativities. The most important of these negativities expressed by the teachers is the addiction of smart phones. Roberts and Pirog

(2013) stated that simple mobile phones, Minaz and Çetinkaya-Bozkurt (2017), Pearson and Hussain (2016) and Soni, Upadhyay, and Jain (2017) stated that smart phones were making addiction. In addition, it is understood that they cannot give up these devices although teachers see smart phones as a threat to health. To reduce the addiction on smart phones, teachers in this situation should limit the use of smart phones and be cautious when using these devices. At the same time, awareness-raising activities related to smart phone addiction can be organized in schools.

It was revealed that a significant number of teachers think that smart phones have positive contributions to professional development. Therefore, it may be useful for teachers to use smart phones more to get information or do research for the lessons. In addition, teachers can be provided more detailed information about how smart phones can be used in lessons and sample applications can be shown. It was determined that the teachers' difficulties related to smart phones were more about technical problems. Yaşar (2013) determined that the problems faced by people related to smart phones are about "usability", "operating system", "connection", and "internet browser". It is recommended that companies that produce smart phones should take precautions to eliminate technical problems such as easy get low battery, freezing of the screen and system failures. In addition, it is recommended to use virus programs on smart phones to prevent from virus attacks and keep personal information secure.

It was found that teachers can use all the features of an average smart phone such as call, e-mail, messaging, management, social media, and connection. When the teachers' use of smart phones considered, it was determined that these devices more used to take pictures or view them. Therefore, it can be said that teachers see smart phones as more entertainment devices. Ellwood-Clayton (2003), Şenel (2016), Taylor and Harper (2003) stated that simple mobile phones and Yusufoğlu (2017) stated that smart phones used for entertainment purposes. It is thought that teachers are in such a perception since they can perform a significant part of the activities that they consider as fun in daily life with the help of smart phones. Another finding that draws attention to the use of smart phones by teachers is that some of the teachers emphasize that some teachers use smart phones for cheating. When it is considered that teachers should be a role model for their students, teachers are advised not to use smart phones for cheating.

In summary, it was seen that smart phones were widely used among teachers. In this context, it should be kept in mind that teachers who have important roles in the development of future generations should be sensitive about the conscious use of smart phones. At this

point, in-service trainings can be provided to teachers on issues such as effective use of technology and technology literacy. In addition, teachers' experience of using smart phones can be investigated by considering gender, age, year of service, title, and educational status. Finally, more detailed data can be obtained regarding the experiences of teachers in using smart phones through interviews and observations.

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