Participatory Educational Research (PER)
Special Issue 2016-III, pp., 18-25 November, 2016
Available online at http://www.partedres.com
ISSN: 2148-6123

Determining the Level of Using Smartphone in Education: Giresun Education Faculty Sample

Pınar ÖZTÜRK GENİŞ*
Giresun University, Institute of Science

Aykut Emre BOZDOĞAN
Gaziosmanpaşa University, Faculty of Education

Zehra AKTAŞ
Science Teacher

Abstract
The purpose of the study is to examine the views of the preservice science teacher about the use of smartphone in education. The study group consists of 55 preservice teachers at Science Teaching Department of Giresun University Education Faculty. Questionnaire which was developed by researchers was used in this research. The questionnaire consists of two parts including 3 open-ended, 3 close-ended questions. Two expert's opinion was taken for the content validity of questionnaire and the final version of the questionnaire was given after the necessary corrections. The results of the study showed that preservice science teachers find adequate themselves the use of other tools such as computer, tablet, smartphone excluding interactive whiteboard. This study indicates that at the point of use of technological tools for teaching in the classroom, male preservice teachers find themselves more adequate than female preservice teachers. According to the findings, preferred uppermost application in smartphones was social networking sites (facebook, twitter, instagram etc.) by preserve science teachers. It was observed that Google was the main internet search engine. In addition to this, it was seen that magazines, newspapers, translation, play store also were commonly used. As a result of study, it was obtain that more than three-quarters of preservice teacher were used smartphones in many lectures for instructional purposes. In the study, it was suggest that the most preferred lectures by preservice teachers were content knowledge and content knowledge education to use smartphones. As a result, it is believed that this study will be beneficial for next studies about usability of smartphones in education.

Key words: smartphones, preservice teacher, science education

*e-mail: pnarozturk5@gmail.com

Introduction

Technology develops rapidly and innovation, progress and growth developing with technology affect our life in multiple dimensions. Technology provides convenience in home, business and school. In addition to this, Technologies' impact on the advancement of science is also undeniable. In other words, there is relationship between science and technology which are growing and developing together. Computers and materials using with computers become widespread so that it has become an indispensable part of our daily life. While computers which have an important place in our lives close faraway, it offers the opportunity to reach issues which were curious about in our environments instantly for us. The use of internet and computer start to become the necessity for individuals and consequently access to information demand is increase. Computer and internet usage are also increased in this direction. This increase, computer and internet provide to reach to information in out of class, in other words "distance education" conception is provided to use. (Bulun, Gülnar and Güran, 2004).

An individual who have internet-based distance education reaches teachers, other learners or lectures using a desktop or laptop computer without interconnection to a particular time. At the same time, it also obtains space-free communication opportunity as long as computer has the wireless feature (Oran and Karadeniz, 2007). While in the distance education need to adhere to the computers, technological devices are also changed and this devices with high memory and processor power transform mobile communication devices which carry out of cooperation capable of many functions. In the later 2000's, the mobile communication means as smartphones has made a great progress (Gökaliler, Sabuncuoğlu Aybar and Gülay, 2011).

Smartphones is given a chance to try different activities in education as in many areas due to properties such as comfortable carrying, sending e-mail, internet access, sending audio/text messages, photographing making the camera recording and smartphones have been mobile learning tool (Chinnery, 2006; Çavuş and İbrahim, 2009; Saran, Seferoğlu and Çağıltay, 2009). In previous studies, smartphones used in foreign language education and have students make practice vocabulary exercises, mini-tests, translations, speaking directly with a private trainer exercises and positive results were obtain. In a similar study, it was found that, 8th Grade in English lecture during the learning of relative pronoun, students preparing performance project using the camera feature of the smartphone are more successful than students preparing traditional written performance project (Şad and Akdağ, 2010).

In Turkey, MEB (2007) is concerned about the emergence of illegal situations for students and teachers as a result of using smartphones out of purposes in elementary, secondary and high school. For this reason, it was imposed restriction using smartphone during lectures by students and teachers due to canalize students to negative behavior. There is no restriction for universities and smartphones can be included in the teaching process.

Smartphones utilization rate has increased in recent years but there are few studies about the level of using smartphone by university students in education. The purpose of this study is to investigate preservice science teachers' potential for using smartphones in education and prepare the ground for next studies.

Methodology

Research design

The study is a descriptive research designed as a survey method. In this study, the views of the preservice science teacher are investigated about the use of smartphone in education. Survey research is a type of research study which is determined by the opinions of the participants about a subject or event and which lets you work in larger samples (Büyüköztürk et al, 2012).

Sample

The study group consists of 158 preservice teachers at Science Teaching Department of Giresun University Educational Faculty, but 55 preservice teachers which used smartphone included the study.

Data Collection Tools

Questionnaire which was developed by researchers was used in this research. Two expert's opinion was taken for the content validity of questionnaire. The final version of the questionnaire was given after the necessary corrections. The questionnaire consists of two parts including 3 open-ended, 3 close-ended questions.

Data Analysis

F requency (f) and percent ratio (%) of descriptive statistical methods were computed for sub-problems of this research in terms of general aim. Open-ended questions in the questionnaire were subjected to content analysis. In this context, independently two investigators analyzed answers which are given to the questions in the questionnaire and they were coded preservice teacher's expression trying to explain the significant section. In the second step, these codes were combined and it was created themes according to common directions. In the third step, codes and themes were organized and tabulated.

Results

Preservice teachers' qualification levels about technological tools for use in-class teaching were investigated in terms of gender (see Table 1).

Table 1. Frequency of preservice teachers 'qualification levels about technological tools (computer, tablet, smartphone, interactive whiteboard) for use in-class teaching in terms of gender

Variables		Gender				
		Female		Male		
		f	%	f	%	TOTAL
Computer	Yes	25	45,5	21	38,2	46
	Partly	6	10,9	0	0	6
	No	3	5,5	0	0	3
Tablet	Yes	12	21,8	16	29,1	28
	Partly	7	12,7	2	3,6	9
	No	15	27,3	3	5,5	18
Smartphone	Yes	24	43,6	20	36,4	44
	Partly	1	1,8	0	0	1
	No	9	16,4	1	1,8	10
Interactive Whiteboard	Yes	8	14,5	8	14,5	16
	Partly	11	20,0	2	3,6	13
	No	15	27,3	11	20,0	26

As can be seen in Table 1, preservice teachers find sufficient themselves about using technological tools excluding interactive whiteboard. It was observed that %71 of the preservice teachers find themselves partially sufficient or insufficient about using interactive whiteboard. At the point of using technological tools in the classroom for teaching, male preservice teacher was seen themselves the more sufficient than female preservice teacher.It was investigate that preservice teachers often use applications in smartphones (see Table 2).

Table 2. Frequency and percent of applications which preservice teachers often use in smartphones

Smartphone Applications	Student	
	f	%
1. Social networking sites	45	81,81
2. Internet search engines	40	72,72
3. Entertainment (Game, TV. Music etc.)	15	27,27
4. Office programs and taking notes	13	23,63
5. Alternative utility program	5	9,08

As can be seen in Table 2, according to the findings, preferred uppermost application in smartphones was social networking sites (%81,81). The most common applications were facebook, twitter, instgram, foursquare, whatsapp among uppermost application. It follows that internet search engines (%72,72). Google was the main internet search engine. In addition to this, it was seen that magazines, newspapers, translation, play store were commonly used. The results also revealed that preservice teacher were used smartphones for entertainment (Game, TV. Music, etc.) (%27,27). In Microsoft Office programs, it was preferred taking note in a word, preparing slides in ppt format and showing (%23,63).

It was investigate that preservice teachers used smartphones for instructional purposes (see Table 3).

Table 3. Frequency of using smartphones for instructional purposes by preservice teachers

		Gender					
		Female		Male		TOTAL	
		f	%	f	%	f	%
Instructional use	Yes	27	79,4	16	76,2	43	78,2
	No	7	20,6	5	23,8	12	21,8
	TOTAL	34	61,8	21	38,2	55	100,0

As can be seen in Table 3, it was not differentiate in terms of percentage between male and female preserve teachers. It was observed that, in general terms, %78,2 of the preservice teachers was used smartphones for teaching and %21,8 of the preservice teachers was not use smartphones for teaching.It was investigate that lectures which preservice teachers used smartphones for teaching (see Table 4).

Table 4. Frequency of lectures which using smartphones for instructional purposes by preservice teachers

		Smartphones Using Situations in The Lectures	
		f	%
Lectures using smartphones	Content Knowledge and Content Knowledge Education	17	31.0
	All Courses	14	25.5
	The Use of Any Course	12	21,8
	Content Knowledge and Common Lectures	5	9.1
	Education and Common Lectures	4	7,3
	Content Knowledge and Education Lectures	3	5,5
	TOTAL	55	100,0

As can be seen in Table 4, the most preferred lectures by preservice teachers were content knowledge and content knowledge education (%31,0) to use smartphones. In addition to this, it was stated that %25,5 of the preservice teachers prefer to use in all lectures, %23,6 of the preservice teacher prefer to use in any lectures.It was investigated that "For what purpose and how do preservice teachers use the smartphones in education?" (see Table 5).

Table 5. Frequences of preservice teachers' view about "for what purpose and how to use the smartphones in education?"

For what purpose and how do you use the smartphones in education?	**Student**	
	f	**%**
1.To examine article, question finding, literature review,	42	76,36
2.To take pictures useful activities and presentations in lectures	11	20,0
3.To download subject, pdf files, ppt files, article, application connecting to the internet	10	18,18
4.To show prepared presentations and pdf files	8	14,54
5.Applications related to communication and social media	7	12,72
6.To repeat course topics and study for exams	7	12,72
7.To follow up-to date information, KPSS and news	6	10,9
8.To show prepared and animation	5	9,09
9.To write a note and store, document storage, memory supportive,	5	9,09

As can be seen in Table 5, it was ascertain that preservice teachers were often used smartphone to examine article, find question and literature review (%76,36); to take pictures useful activities and presentations in lectures (%20) and to download subject, pdf files, ppt files, article, application connecting to the internet (%18,18) in education.It was investigated that preservice teachers' views about advantages of using smartphones in education (see Table 6).

Table 6. Frequences of preservice teachers' views about advantages of using smartphones in education

Advantages	Student	
	f	%
1. It saves of time due to reach more information faster and easier.	34	61,81
2. It is advantageous due to get connected to the internet at any time.	7	12,72
3. It makes the lecture funny due to facilitate following the lecture and provides the motivation for the lecture.	5	9,09
4. It makes lectures permanent with the possibility of taking photos during lectures and supporting lectures visually.	5	9,09
5. It provides convenience about literature review, updated information and instructional research, just like a library.	5	9,09
6. It should not be used in education because of distraction. It is not advantageous.	5	9,09
7. It can be used in Microsoft Office applications and slides easily, it function like a computer giving opportunity of information and notes storage, textbook downloads.	3	5,45
8. It is advantageous because of given the opportunity to record video and audio, check up on mail and repeat the lectures.	2	3,63
9. It is useful due to given the opportunity to look at the lectures note, and academic calender for students. It is useful due to the planner and reminder.	1	1,81

As can be seen in Table 6, preservice teachers were enumerated using smartphones in education as follows "It saves of time due to reach more information faster and easier (61,81)", "It is advantageous due to get connected to the internet at any time (%12,72)", "It makes the lectures funny due to facilitate following the lecture and provides the motivation for the lecture (%9,09)" and "It makes lectures permanent with the possibility of taking photos during lectures and supporting lectures visually (%9.09)".

Conclusion And Discussion

The results of the study showed that preservice science teachers find sufficient themselves the use of other tools such as computer, tablet, smartphone excluding interactive whiteboard. In addition to this, at the point of using technological tools in the classroom for teaching, male preservice teacher was seen themselves the more sufficient than female preservice teacher.

According to finding, preferred uppermost application in smartphones by preservice teachers was social networking sites. It was observed that the most common applications were facebook, twitter, instgram, foursquare, whatsapp among uppermost application. Çakmak and Yalçın (2013) investigated university students who were used mobile technology. The results revealed that university students were used mobile technology to follow social networks which they were members and to keep track of e-mail. It was observed that Google was the main internet search engine to make investigation. In addition to this, it was seen that

magazines, newspapers, translation, play store were commonly used. However, as a result of the study, it was obtain that more than three-quarters of preservice teacher were used smartphones in many lectures for instructional purposes. Yılmaz, Sanalan and Koç (2009) studied on evaluation of m-learning applications. They were reported that students' views about using mobile devices for learning activities were positive. In addition this finding, it was believed that these activities will take place frequently. Otherwise, it was emphasized that students were wanted to use these activities in performance-oriented lectures (Physics Lab., Chemistry Lab., Biology Lab., and Science Applications Lab.). In this study, it was seen that the most preferred lectures by preservice teachers were content knowledge and content knowledge education in science teaching program to use smartphones. This study also found consistent result like previous study.

It was found that preservice teachers were often used smartphone to examine article, find question and literature review; to take pictures useful activities and presentations in lectures. As can be seen in the study, it was thought that preservice teachers were found advantageous using smartphones in education due to give opportunities the way that reach more information faster and easier; provide saving of time; get connected to the internet at any time. Gündüz, Aydemir and Işıklar (2011) studied on 3G mobile learning environments. They indicated that lecturers were though that mobile learning environments were be interesting, motivating, facilitating and accelerating to access information. This study indicated that %90 of the preservice teachers' opinion about using smartphones in learning activities were advantageous. There are parallel results with Gündüz, Aydemir and Işıklar's (2011) studies. As a result, it is believed that this study had determined smartphones using level in education and this study will be beneficial for next studies about usability of smartphones in education.

References

Bulun, M., Gülnar, B. & Güran, M.S. (2004). Eğitimde Mobil Teknolojiler, *The Turkish Online Journal of Educational Technology*, 3 (2). 165-169

Büyüköztürk, Ş., Çakmak, E.K., Akgün, Ö.E., Karadeniz, Ş. & Demirel, F. (2012). *Bilimsel Araştırma Yöntemleri (11. Baskı)*. Pegem A Yayıncılık, Ankara.

Chinnery, G. M. (2006). Emerging technologies, going to the mall: Mobile assisted language learning. *Language Learning & Technology. 10 (*1), 9-16.

Çakmak, T. & Yalçın, H. (2013). Üniversite Öğrencilerinin Mobil Teknoloji Kullanımı: Hacettepe Üniversitesi Bilgi Ve Belge Yönetimi Bölümü Örneği. *Hacettepe Üniversitesi Türkiyat Araştırmaları Dergisi, 2013 Bahar (18), 47-61*

Çavuş, N. & İbrahim, D. (2009). M-learning: An experiment in using sms to support learning new English language words. *British Journal of Educational Technology, 40* (1), 78–91.

Gökaliler, E., Sabuncuoğlu Aybar A. & Gülay, G. (2011). Bir Statü Tüketimi Göstergesi Olarak Iphone Markalı Akıllı Telefon Algısı: Üniversite Öğrencileri Üzerine Bir Araştırma, *Journal of Selcuk Communication,*7 (1). 36- 48

Gündüz, Ş., Aydemir, O. & Işıklar, Ş. (2011). 3G Teknolojisi İle Geliştirilmiş M-Öğrenme Ortamları Hakkında Öğretim Elemanlarının Görüşleri. *Selçuk Üniversitesi Ahmet Keleşoğlu Eğitim Fakültesi Dergisi, 31*, 101-113.

Milli Eğitim Bakanlığı. (2007). *İletişim araçlarının okullarda kullanımı*. Millî Eğitim Bakanlığı Özel Eğitim Rehberlik ve Danışma Hizmetleri Genel Müdürlüğünün 19.01.2007 tarihli, 2007/08 nolu Genelgesi.

Oran, M.K. & Karadeniz, Ş. (2007). *İnternet tabanlı uzaktan eğitimde mobil öğrenmenin rolü*.http://ab.org.tr/ab07/bildiri/66.pdf adresinden 05.03.2014 tarihinde erişilmiştir.

Saran, M., Seferoğlu, G. & Çağıltay, K. (2009). Mobile assisted language learning: English pronunciation at learners' fingertips. *Eurasian Journal of Educational Research, 34,* 97-114.

Şad, N. & Akdağ, M. (2010). İngilizce Dersinde Cep Telefonlarıyla Üretilen Sözlü Performans Ödevlerinin Yazılı Performans Ödevleriyle Karşılaştırılması. *Türk Eğitim Bilimleri Dergisi 8(3), 719-740*

Yılmaz, Ö., Sanalan, V.A. & Koç, A, (2009). An Evaluatıon Of M-Learnıng Applıcatıons. *9th International Educational Technology Conference (IETC2009),* Ankara, Turkey.