Participatory Educational Research (PER)
Vol. 3(1), pp. 22-29, April, 2016
Available online at http://www.partedres.com
ISSN: 2148-6123
http://dx.doi.org/10.17275/per.16.01.3.1

The Analysis of New Generation Mobile Device Dependencies of Students in Faculty of Education

Agah Tuğrul KORUCU*
Ahmet Kelesoglu Faculty of Education, Department of Computer Education and Instructional Technology, Necmettin Erbakan University, Konya, Turkey

Ertuğrul USTA
Ahmet Kelesoglu Faculty of Education, Department of Computer Education and Instructional Technology, Necmettin Erbakan University, Konya, Turkey

Article history

Received:
01.01.2016

Received in revised form:
01.03.2016

Accepted:
03.03.2016

Key words:
Technological Dependency; New Generation Mobile Device Usage; Dependency; Smart Phone Dependency; Dependency To The Communication Device.

The development of technology brought about some advantages as well as particular disadvantages. Smart phones which are new generation mobile devices are technological tools for meeting certain needs such as entertainment, social media, realization of daily routines and usage for educational purposes. The facts that new generation mobile devices can realize many transactions and provide solutions for individuals' needs immediately, arise the continuous interaction of individuals with mobile devices and thus, technological dependency. It is important to determine the usage of mobile technology by instructors who own a particular role in ICT integration process. The habitudes which instructors gained before their professional lives affect their careers. Therefore it is important to determine their usage of new generation mobile technologies in order to earn them the correct habitudes. The aim of this study is to determine the prospective instructors' usages of smart phones who receive education in different branches of faculty of education in terms of various variables. Research group consists of 217 prospective instructors who are studying in different branches at Necmettin Erbakan University. As data collection tool of the study; "personal information form" and "Smart Phone Dependency Scale" were used. The scale is 6-point Likert-type scale. It consists of 33 items. The Cronbach alfa (α) internal consistency coefficient of Smart Phone Dependency Scale is found 0.947. SPSS package program is used in order to analyze the data collected by data collection tools. Descriptive statistics, t-test for independent samples and analysis of variance are used for the analysis of data.

Introduction

In line with technological developments, the concept of mobile learning is being more and more mentioned and studies regarding the usages of these devices in educational process have become widespread and as a result of this, the concept of m-education occurred. Mobile devices which are among the newest technologies in today's world, are very advantageous in terms of their provision of more time and place to users and being cheaper when compared to

*Correspondence:akorucu@*konya.edu.tr*

desktop computers (Oran and Karadeniz, 2007). Studies recently conducted in literature demonstrate that most students now possess smart phones available for operating mobile applications. The causes of smart phone usage by individuals are social needs, effect of environment, dependency, simplification of life etc. (Park and Chen, 2007; Wilson and McCarthy, 2010; Campbell, 2007; Hjorthol, 2008; Kim, 2008; Taner, 2013).

Studies conducted regarding mobile learning in our country are mostly descriptive; experimental studies do not exist at all. However it is possible to run across experimental studies in the literature. Within these studies the following issues are handled; the effects of mobile learning to academic success, attitudes and perceptions of students in various areas, attitudes and perceptions of instructors, applicable mobile environments, collaborative mobile environments, self-regulatory learning in mobile environments, the effects of different provisions of information in mobile environments, game-based mobile learning, note-taking using mobile tools, mobile applications in informal education and increased reality in mobile environments (Korkmaz, 2015).

Sharples and friends (2005) and Cochrane (2010) state that the most important difference of mobile learning among other learning types is the ability of continuous movement of learners. Quinn (2000) defines mobile learning as using hand devices for learning. This first description of Quinn (2000) is being debated and has changed a bit, however it is adopted essentially. According to Çakır (2011), a mobile learning shall include situations in which the particular part of learning is realized outside of schools by which people structure their activities making educational processes and results possible. Owing to the easy accessibility and portability of mobile technologies, learning activities such as exercising and application can be moved out of the classrooms (Saran, Seferoğlu and Çağıltay, 2009).

It can be stated that a lot of issues exist to be discussed based upon the subjects to be considered in the design of these environments regarding mobile learning. One of these discussion-worth issues is dependency which is perceived as an important illness and problem in our world. New mobile technologies began to affect the daily lives of individuals deeply and provided the connection of people to virtual networks continuously and from everywhere. When considered that mobile phones are an important part of daily lives of individuals, the following questions come up; is the mobile phone usage a dependency? Is it a stimulation disorder? Or is it a dependency? According to DSM-IV-TR (2005), stimulation control disorder is defined as a repetitive and irresistible behavior and the difficulty of resisting the realization of a behavior harmful to self or another. The determination of dependency situations of individuals on these devices and environments which these devices provide will be the first stage in overcoming prospective possible problems. Within this scope, the aim of this study is the determination of smart phone usages of prospective students in different branches of faculty of education in terms of various variables. The answers are sought for the following questions within this general goal:

(1) Do smart phone dependencies of students in faculty of education differ in terms of their genders?
(2) Do smart phone dependencies of students in faculty of education differ in terms of their departments?
(3) Do smart phone dependencies of students in faculty of education differ in terms of their classes?
(4) Do smart phone dependencies of students in faculty of education differ in terms of their socio-economic levels?

(5) Do smart phone dependencies of students in faculty of education differ in terms of their situations of owning their own internet?
(6) Do smart phone dependencies of students in faculty of education differ in terms of their weekly internet usage durations?

Method

The Model of the Study and the Workgroup

Conducted according to the screening model, this study comprises of 217 students from the Department of Computer and Instructional Technologies, the Department of Art Teaching, and the Department of Pre-school Teaching within the body of Ahmet Keleşoğlu Faculty of Education, University of Necmettin Erbakan in the academic year 2014-2015 Spring.

Data Collection Tools

As data collection tool of the study; "personal information form" and "Smart Phone Dependency Scale" developed by Demirci and friends (2014) are used. The scale is 6-point Likert-type scale. It consists of 33 items and 7 dimensions. The Cronbach alfa (α) internal consistency coefficient of Smart Phone Dependency Scale is found 0.947.

Data Analysis

SPSS (The Statistical Package for The Social Sciences) package program is used in order to analyze the data obtained in scope of the study and all hypotheses are tested in 0.95 reliability level (p = 0.05). Descriptive statistics, t-test for independent samples and analysis of variance are used for the analysis of data. Parametric tests are used during the data analysis because the data correspond to parametric test assumptions. Within this concept, tests used for each sub-goal are explained below.

Demographical data collected from the participants are clarified with descriptive statistical methods. T-test for unrelated samples is used in order to test whether the competence level differs reasonably according to the genders and internet possession situations of the participants. Moreover, single factoral analysis of variance (Anova) for unrelated samples is used in order to test whether the grades obtained by the participants from the scale differs reasonably in terms of weekly internet usage durations, socio-economic levels, class levels and departments of the participants.

Findings and Interpretations

Table 1 demonstrates the descriptive results regarding the genders of students in the workgroup.

Table 1. Genders of the workgroup

Genders	N	%
Male	64	29,5
Female	153	70,5
Total	217	100,0

As it is clear in Table 1, among the students who participated in the study, 64 are male

(29,5%) and 153 are female (70,5%). Table 2 demonstrates the descriptive results regarding the internet possession situations of students in the workgroup.

Table 2. Internet possession situations of the workgroup

Possession of Internet	N	%
Yes	199	91,7
No	18	8,3
Total	217	100,0

As it is clear in Table 2, among 217 students who participated in the study, 199 have access to internet (91,7%) while 18 don't have (8,3%). Table 3 demonstrates the descriptive results regarding the weekly internet usage durations of the workgroup.

Table 3. Weekly internet usage durations of the workgroup

Weekly Internet Usage Durations	N	%
0-3 hours	23	10,6
3-6 hours	50	23,0
6-9 hours	45	20,7
9 hours and over	99	45,6
Total	217	100,0

As it is clear in Table 3, among 217 students who participated in the study, 23 use 0-3 hours of internet weekly, 50 use 3-6 hours, 45 use 6-9 hours and 99 use 9 hours and over. Table 4 demonstrates the descriptive results regarding the distribution of students in the workgroup in terms of their educational departments.

Table 4. Distribution of students in terms of their educational departments

Departments	N	%
Pre-school	36	16,6
CIT	141	65,0
Art	40	18,4
Total	217	100,0

As it is clear in Table 4, among 217 students who participated in the study, 36 receive education in the Pre-school Teaching Department, 141 in CIT Teaching Department, 40 in Art Teaching Department. Table 5 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not in terms of the departments of students.

Table 5. Results of grades according to departments

Departments	N	$\overline{X}$	S
Pre-school	36	80,4167	24,19962
CIT	141	71,3404	24,31573
Art	40	75,7750	22,67438
Total	217	73,6636	24,14313

	Variance Resource	Total of Squares	sd	Average of Squares	F	p
Department	Inter-groups	2581,058	2	1290,529	2,239	,109
	Intra-groups	123323,385	214	576,277		
	Total	125904,442	216			

As it is clear in Table 5, according to the findings obtained using the single factoral variance analysis (ANOVA) for unrelated samples, there isn't any reasonable difference among the

grades of participants in terms of their departments [F(2-214)= 2,239, p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their departments. Table 6 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not in terms of the classes of students.

Table 6. Results of grades according to classes

Classes	N	$\overline{X}$	S
1	37	80,9730	24,09989
2	71	73,6056	27,80158
3	109	71,2202	21,13947
Total	217	73,6636	24,14313

	Variance Resource	Total of Squares	sd	Average of Squares	F	p
Class	Inter-groups	2627,796	2	1313,898	2,281	,105
	Intra-groups	123276,646	214	576,059		
	Total	125904,442	216			

As it is clear in Table 6, according to the findings obtained using the single factoral variance analysis (ANOVA) for unrelated samples, there isn't any reasonable difference among the grades of participants in terms of their classes [F(2-214)= 2,281, p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their classes. Table 7 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not according to the weekly internet usage durations of students.

Table 7. Results of grades according to weekly internet usage durations

Weekly Internet Usage Durations	N	$\overline{X}$	S
0-3 hours	23	71,3043	21,26336
3-6 hours	50	70,4600	28,50579
6-9 hours	45	68,6222	23,05851
9 hours and over	99	78,1212	22,35944
Total	217	73,6636	24,14313

	Variance Resource	Total of Squares	sd	Average of Squares	F	p
Weekly Internet Usage Durations	Inter-groups	3752,030	3	1250,677	2,281	,091
	Intra-groups	122152,413	213	573,486		
	Total	125904,442	216			
	Total	125904,442	216			

As it is clear in Table 7, according to the findings obtained using the single factoral variance analysis (ANOVA) for unrelated samples, there isn't a reasonable difference among the grades of participants in terms of their weekly internet usage durations [F(3-213)= 2,181, p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their weekly internet usage durations. Table 8 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not according to the socio-economic levels of students.

Table 8. Results of grades according to socio-economic levels

Socio-economic levels	N	$\overline{X}$	S

Good		30		73,1000		23,69250
Medium		179		73,4302		24,40159
Bad		8		81,0000		21,34077
Total		217		73,6636		24,14313
	Variance Resource	Total of Squares	sd	Average of Squares	F	p
Socio-economic levels	Inter-groups	449,865	2	224,933	,384	,682
	Intra-groups	125454,577	214	586,236		
	Total	125904,442	216			

As it is clear in Table 8, according to the findings obtained using the single factoral variance analysis (ANOVA) for unrelated samples, there isn't a reasonable difference among the grades of participants in terms of their socio-economic levels [F(2-214)=,384 p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their socio-economic levels. Table 9 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not according to the genders of students.

Table 9. Results of grades according to genders

Groups	N	$\overline{X}$	S	Sd	t	p
Male	64	70,5313	21,41648	215	-1,238	,217
Female	153	74,9739	25,14666			

*P<0.05

As it is clear in Table 9, the result is not reasonable because it is .217 > .05 for *p<.05 relevance level. The average of grades which participants obtained as a result of smart phone dependency scale are near to each other (average of males is =70,53; average of females is =74,97), thus as it is clear in Table 9, the result is .217>.05 for *p<.05 relevance level so the result is not reasonable. In other words, the grades participants obtained don't differ reasonably in terms of their genders. Table 10 includes the findings concerning whether the grades which participants obtained from the smart phone dependency scale reasonably differ or not according to the internet possession situations of students.

Table 10. Results of grades according to internet possession situations

Internet possession	N	$\overline{X}$	S	Sd	t	p
Yes	199	73,6784	24,33825	215	0,30	,976
No	18	73,5000	22,51601			

*P<0.05

The average of grades which participants obtained as a result of smart phone dependency scale are near to each other (average of those who possess internet is =73,67; average of those who don't possess internet is =73,50), thus as it is clear in Table 10, the result is .976>.05 for *p<.05 relevance level so the result is not reasonable. In other words, the grades participants obtained don't differ reasonably in terms of their situations of internet possession.

Conclusion and Suggestions

According to the results of this study, among the students who participated in the study, 64 are male (29,5%) and 153 are female (70,5%). among 217 students who participated in the study, 199 have access to internet (91,7%) while 18 don't have (8,3%). Among 217 students who participated in the study, 23 use 0-3 hours of internet weekly, 50 use 3-6 hours, 45 use 6-9 hours and 99 use 9 hours and over. Among 217 students who participated in the study, 36 receive education in the Pre-school Teaching Department, 141 in CIT Teaching

Department, 40 in Art Teaching Department. According to the findings obtained using the single factoral variance analysis (ANOVA) for unrelated samples, there isn't any reasonable difference among the grades of participants in terms of their departments [F(2-214)= 2,239, p>.05]. there isn't any reasonable difference among the grades of participants in terms of their classes [F(2-214)= 2,281, p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their classes. there isn't a reasonable difference among the grades of participants in terms of their weekly internet usage durations [F(3-213)= 2,181, p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their weekly internet usage durations. there isn't a reasonable difference among the grades of participants in terms of their socio-economic levels [F(2-214)=,384 p>.05]. In other words, the smart phone dependencies of the participants don't differ in terms of their socio-economic levels. the result is .217<.05 for *p<.05 relevance level so the result is not reasonable. In other words, the grades participants obtained don't differ reasonably in terms of their genders. the result is .976>.05 for *p<.05 relevance level so the result is not reasonable. In other words, the grades participants obtained don't differ reasonably in terms of their situations of internet possession. In the other words, according to the results of this study which aims the determination of smart phone usages of the workgroup consisting of prospective instructors receiving education in different departments of faculty of education, smart phone dependencies of participant students don't demonstrate any meaningful variations in terms of classes and departments, socio-economic levels, weekly internet usage durations and internet possession situations of the participants. In other words, the smart phone dependencies of the participants don't differ in terms of their genders, classes and departments, socio-economic levels, weekly internet usage durations and internet possession situations. It is also possible to run across similar or different results in the literature. It can be stated that this result is originated from some factors such as cities of accommodation, monthly income situations, education levels, social environments, social media usage levels of the workgroup.

Consequently, when considered that smart phones which prospective instructors use are mobile learning devices, it can be stated that the education of prospective instructors is not being debated sufficiently in the literature. Taking account the results of this study, it is possible to define today's students as youngsters of digital generation who are more eager to digital learning. In other words, modern-day youngsters are quite prone to mobile learning environments and the inter-individual differences are not much. In the circumstances, the analysis of the following issues is suggested; the effects of mobile learning on various variables by discussing mobile learning in different lessons with different design approaches, which design principles shall be taken into account while designing a mobile environment, which education design approach shall be preferred for an education, how to integrate these technologies into educational programs and analysis of mobile learning environments in terms of individual differences, etc.

References

Campbell, S.W. (2007). A cross-cultural comparison of perceptions and uses of mobile telephony, *New Medoa Society*, Vol. 9 No. 2, pp. 343-63.

Cochrane, T. (2010). Mobile web 2.0: Bridging learning contexts. In S. Caballé, F. Xhafa, T. Daradoumis, & A. A. Juan, Architectures for distributed and complex m-learning systems: Applying intelligent technologies (s. 123-151). UAS: Information Science Reference.

Çakır, H. (2011). A software development and evaluation of mobile learning. *Cukurova University Faculty of Education Journal*. 40, 01-09.

Demirci, K., Orhan, H., Demirdas, A., Akpınar, A., & Sert, H. (2014). Validity and reliability of the turkish version of the smartphone addiction scale in a younger population. *Bulletin of Clinical Psychopharmacology, 24(*3), 226-34.

DSM-IV-TR (2005). Handbook of Diagnostic Criteria Reference Manual. (Translation: Ertuğrul Köroğlu). Ankara: Hekimler Publishing.

Hjorthol, R. J. (2008). The mobile phone as a tool in family life: impact on planning of everyday activities and car use, *Transport Review*, Vol. 28, No. 3, pp. 303-20.

Kim, S. H. (2008). Moderating effects of job relevance and experience on mobile wireless technology acceptance: adoption of a smartphone by individuals, *Information and Management*, Vol. 45, pp. 387-93.

Korkmaz, Ö. (2015). New Trends on Mobile Learning in The Light of Recent Studies, *Participatory Educational Research (PER) Vol. 2(*1), pp. 1-10.

Oran, M. K. and Karadeniz, Ş. (2007). The role of mobile learning role in intenet based distance education. Available at: http://ab.org.tr/ab07/bildiri/66.pdf.

Park, Y. and Chen, J.V. (2007). Acceptance and adoption of the innovative use of smartphone, *Industrial Management and Data*, Vol. 107 No. 9, pp. 1349-65.

Quinn, C. N. (2000). mLearning: Mobile, wireless, in-your-pocket learning. http://www.linezine.com/2.1/features/cqmmwiyp.htm.

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

Sharples, M., Taylor, J., & Vavoula, G. (2005). *Towards a Theory of Mobile Learning*. In Proceedings of m-learn Conference, Cape Town: 2005, South Africa.

Taner, N. (2013). User reviews of Smart Phones: An Application in the city center of Kastamonu, *Business & Management Studies: An International Journal*, 1(2).

Wilson, S. and McCarthy, G. (2010). The mobile university: from library to the campus, *Reference Services Review*, Vol. 38 No. 2, pp. 1-39.