The Effect of Mobile Phones on Increasing Public Information: A Comparison between the Students of Kharazmi and Allameh Tabatabai University of Iran

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ABSTRACT: The present study aims to compare the impact of mobile on increasing public information of students of Kharazmi and Allame Tabatabayi Universities in 2013. The study method is quasi-experimental with pre-test and posttest design by control and experiment group. This study is based on researcher-built test composed of 20 questions. To evaluate face and content validity, the opinions of lecturers of educational technology, ICT and sociology are used. The reliability of measure is supported by Cronbach's alpha coefficient (0.89). 160 students are selected by random cluster method. At first, by 20-item test, pre-test is performed. Then, the experiment group received training via mobile and control group received training by traditional method. Post-test is performed with the same questions. Finally, survey questionnaire is presented to experiment group. SPSS software, version 19, t-test and covariance analysis are used for data analysis. There is no significant difference between the mean of two groups in pre-test (experiment 7.57 and control 7.75) but there is a significant difference in posttest (experiment 17.25 and control 12.90). The training by traditional and mobile methods is effective on learning but training via mobile has high impact and the students are more interested in being trained by this method.
Key words: Training Via Mobile, Traditional Training, Public Information, Student.

INTRODUCTION

One of the basic sections of high education is change and it is one of the effective factors on this field, social progresses and technology. Thus, new views regarding education can be raised. Many authorities in education and learning by increasing development of digital technology consider innovation of new educational methods by multi-media technology as necessary (Godwin, 2008). New education methods are introduced for the growth of skills and abilities of people. Also, they can emphasize on the necessary of learning high level skills as problem solving and learning and knowledge strategies as participative and active. These new methods arise from new technology development and their application in routine life, training and job positions. Namely ICT of internet and its applications (including word wide network, e-mail, teleconference, computer-based participative learning and learning management systems) found good position in high education (Zamani and Abdollahi, 2011).

In Universities, improving learning and teaching quality is one of the important issues. Using technology to support teaching and learning process can be effective based on existing problems. Now, educational system of Universities is as students have not permanent access to lecturers. Students can not have adequate training any time needing learning in specific field and achieve the response of their questions. Based on the existing educational system, education interactions are remained in a level and are not improved (Starr, 2003). Learning situations of students are based on classroom, their learning is not continuous and the interaction in learning between

students and lecturers and between the students is low (Kamar and Ong'ondo, 2007). In addition, in most of universities, pamphlets are used for textbooks but time is very important but this time is dedicated to providing pamphlets and test sources (Gregson and Jordaan, 2009). The existing educational methods don't present the information of students rapidly to them and for various conditions; students are not flexible and cannot create adequate motivation among the students (Peters, 2007).

The students need techniques helping them in better understanding of textbooks and provide required guidance. Also, students need comprehensive, global and update information. To have access to required information, using technologies is an obvious issue (Chase and Herrod, 2009). Due to the familiarity of students of technology at acceptable level, today most of educational centers to transfer educational content can take technology. Creating electronic educational environments emphasizes on this claim (Balasundaram and Ramadoss, 2008). Electronic learning is a new method in education presenting and managing learning opportunities to improve knowledge and skill via internet and computer networks and turn education and learning from training to learning. Generally, e-learning is a method of learning based on application of ICT and other computer networks (Aminpoor, 2005). Also, the term e-learning includes applications and web-based education performance, computer-based learning, electronic classrooms and collaboration in electronic networks. Generally, e-learning is a method of learning based on application of ICT and other computer networks and mobile learning is a subset of e-learning developed since 2000 in organizations,

institutions and schools (Saiedipoor et al., 2011). This method was used since 2007 in Britain, Sweden and Italy and students aged 16 to 24 years leaving the school were covered and also this technology develops literacy and numerical school and self-confidence, independent learning and self-centeredness are developed (Sadpoor, 2008). Mostly, adults believe that this type of education let them continued their work full-time and perform their family duties during training in everywhere and anytime (Gilbert, 2001). Brown considers mobile learning as a subset of e-learning and e-learning is a wide concept including both online training and mobile training (Brown, 2003).

Mobile learning is sending and transferring learning via mobile devices as lap top, pocket computer, mobile or other mobile devices facilitating the performance of learning in learning process and the need of learner is met at any time and place (Bull, 2007). Mobile learning provides easy access of learners to various education sources at any place and time and the students by these technologies can download their sources and send e-mail to their teacher. This is a method providing continuous learning for students (Ciffci ON & Tabak, 2012). Some studies of topic regarding review of literature in Iran and abroad are investigated.

In a study, the comparison of the impact of two methods of learning via mobile and lecture –based learning on the learning of learners, the impact of mobile learning and lecture on learning of students of Agriculture institution of Khushehaye Zarinshahr of Ravansar town is evaluated. 30 boy students are selected and are divided into two similar groups based on age, average and educational condition. At first pretest is performed and then control group received training via lecture and experiment group received training via mobile and posttest was performed with the same questions. The data were tested statistically by t-test. The results showed that two teaching methods (mobile and lecture) were effective on learning of learners but mobile teaching had high influence on learning (Papzan and Soleymani, 2010).

Another study as training anatomy via mobile compared to lecture learning on learning of medical students was performed on 62 medical students of Medical Sciences University of Bushehr. The results showed that training via mobile like lecture can improve learning and memorization of medical students and its effective was higher (Nasiri et al., 2014).

A study evaluated the impact of e-learning by mobile text message on metabolic control of Diabetes type 2 patients of Karaj city, Iran. The study aimed to evaluate the impact of e-learning on metabolic control with emphasis on training via mobile. In this study, 81

patients suffering from diabetes type 2 referred to diabetes association of Karaj city were selected based on inclusion criteria as randomly and were divided into experiment (n=43) and control group (n=38). The result showed that positive impact of using mobile in presenting health services and management of efficient chronic diseases (Goodarzi and Ebrahimzadeh, 2014).

Another study evaluated the impact of mobile training on motivation and attitude of English students and also investigated the impact of teaching method via mobile on attitude and motivation of students to English language. 76 students were selected by convenient sampling method and were divided into experiment group (38) and control group (38). The experiment group received mobile teaching and control group received traditional training. Finally, the comparison of the mean of two groups showed that mobile phone teaching had positive impact on motivation, interest, and attitude to English language, complementary direction and tendency to learning English language among students (Ayati & Sarani, 2012).

In an evaluation of the amount and type of using mobile by high school students, the results showed that most students had mobile and considered it as a necessary tool and girls applied mobile more than boys (Hasanzadeh et al., 2011).

Another study as e-learning in low-populated regions stated that mobile learning leads to flexibility in learning and any learner in any time and place can learn based on his speed (Daichendt and Magdaş, 2009). In other study researchers in proposed plan of mobile learning model stated that mobile-based applications changed the method people communicated and had access to the information sources and facilitated it (Yau and Joy, 2010).

The old methods of classroom and lecture are used in schools and universities and its highest advantage is presenting information to more people (Lake, 2001). Despite new educational methods, it is remained as an educational method (Cooper, 2003).

Based on little efficiency of traditional training methods, time-consuming and the need to the presence in definite place and time, limited access to learners to teachers, learning content and sources and the lack of improving the motivation of learners to learning, restrict the efficient of these methods. Based on the evaluation of review of literature, abilities of mobile phone applied by most of adults namely students, availability and user-friendly of mobile, saving the time of teacher and student, providing learning at any place and time, creating interest and motivation in learners can lead to the evaluation of adaptation of these technologies with teaching and learning grounds by researchers. The above items

define the necessity of present study. This study has the general aim of comparison of the impact of mobile on increasing general information of students of Kharazmi and Allametabatabayi University and the following hypotheses are evaluated:

First hypothesis: Traditional teaching has positive impact on learning public information of students of Allame Tabatabayi University.

Second hypothesis: Mobile teaching has positive impact on learning public information of students of Kharaszmi University.

Third hypothesis: Mobile teaching has high effect compared to traditional teaching method on learning public information of students.

MATERIAL AND METHODS

The present study is a quasi-experimental in which value of one or some independent variables is changed and its effect on one or some dependent variables is evaluated (Biyabangard 2009). The present study is composed of an independent variable (mobile learning) and its effect on a dependent variable (public information) is evaluated. Also, the results are compared with traditional classroom method (control group). The study population is all BA students of Kharazmi and Allame Tabatabayi Universities during 2012-2013, of this population, 160 people are selected by cluster random sampling method. It means that at first three colleges and of each college, two classrooms are selected by random method. Then, they are divided into 80 people. The students of Kharazmi University are selected as experiment group being compared with Allame Tabatabayi University in control group. It was possible to distribute sending SMSs among the students and this affected the results

of the study and control group was selected among Allame Tabatabayi University. These groups were divided in terms of age and education into two similar groups (80 experiment and 80 control groups). The data collection measure is 20-item researcher-built test and at first by researcher-built test, pre-test is performed and then SMSs with public information are sent to the sample selected among Kharazmi University students (experiment group). The information was given as pamphlet to control group and the required explanations were presented to the students and then post-test was performed of two groups (experiment and control) and finally a researcher-built questionnaire regarding the interest and attitude of experiment group regarding mobile teaching was presented. For the analysis of pre-test and post-test data of both groups and determining their learning, t-test is used and to compare the difference of the man of experiment and control groups, univariate covariance analysis test is used.

The validity of 20-item test of learning is tested by experts and face and content validity of test are confirmed by 7 lecturers of educational technology, ICT and population. The reliability was calculated as 0.89 by Cronbach's alpha and this showed good reliability.

RESULTS

To evaluate the public information of students in control and experiment groups, pretest and posttest are performed (Table 1). This test is including 20 questions of four multiple choices of the sources of public information evaluation. The results for two mentioned groups are regarding the tests of learning in Table 2.

Table 1. The features for comparison of experiment and control group.

Groups	Age mean	Education
Control group	3.1 ±5 /21	BA
Experiment group	2.4 ±5 /21	BA

Table 2. The mean and standard deviation of public information in pre-test and post-test based on groups

Variable	Test	Traditional group		Mobile group	
		SD	Mean	SD	Mean
Public Information	Pre-test	1.41	7.70	1.74	7.57
	Post-test	1.69	12.90	1.49	17.25

As shown in Table 2, the mean of traditional teaching and mobile teaching in public information is increased from pre-test to post-test but the mean of training group via mobile phone is increased. In pre-test of public information in control group students,

the mean is 7.70 and standard deviation 1.41. These results in comparison with experiment group with mean 7.57 and standard deviation 1.74 is not different and we can say the groups have the same levels. After applying experiment variable (mobile-based teaching

method), post-test scores as follows, the mean of experiment group is 17.25 and standard deviation 1.49 and post-test is performed on control group and the data (mean 12.90, SD 1.69) show the superiority of experiment group compared to control group (the difference of mean and standard deviation of two groups in post-test). To evaluate each of study hypotheses, the hypotheses are tested by inference statistics.

The findings of study hypotheses

First hypothesis: The traditional teaching method has positive impact on public information learning of students of Allame Tabatabayi University. To evaluate the first hypothesis, t method for dependent groups is used. Is the difference between learning of control students in pretest and posttest is due to the sampling error or significant difference. A summary of findings of these calculations is shown in Table 3.

Table 3. The results of t-test, comparison of pre-test and post-test of public information for first hypothesis

Test	N	Mean	SD	Degree of freedom	t	Significance
Pre-test	80	7.70	1.41	79	-20.40	0.001
Post-test	80	12.90	1.69			

As shown in Table 3, the mean of pre-test and post-test of public information is significantly different and teaching via mobile increases public information. There is a significant difference between the mean of pretest and post test scores of control group in traditional teaching at level 0.001 (t=-20.40). It means that traditional teaching has positive and significant impact on learning public information of students in Allame Tabatabayi University and first hypothesis is supported.

Second hypothesis: Mobile teaching has positive impact on learning public information of students in Kharazmi University. To test the second hypothesis of study, t test is used for dependent groups. This method shows the difference between learning of public information of students (experiment group) receiving teaching via mobile in pre-test and post-test. A summary of the findings of these calculations is shown in Table 4.

Table 4. A summary of the results of t-test to compare pre-test and post-test of public information

Test	N	Mean	SD	Degree of freedom	t	Significance
Pre-test	80	7.57	1.74	79	-36.36	0.001
Post-test	80	17.25	1.49			

The data of Table 4 shows that there is a significant difference between the mean of pre-test and post-test scores of public information. We can say that teaching via mobile increases public information of people. As shown in Table 4, there is a significant difference between the mean of pre-test and post-test scores of experiment group in mobile teaching at level 0.01 and t=-36.36 means that mobile teaching has positive and significant impact on learning public information of students in Kharazmi University. Thus, second hypothesis is supported.

Third hypothesis: Mobile-based teaching compared to traditional teaching method has high effect on learning of public information of students. To evaluate the significance of the difference of groups (mobile and traditional) in posttest of public information scores, uni-variate covariance analysis is applied. At first we should be sure of the homogeneity of variances, and then Levene's test is used. The results of test are shown in Table 5.

Table 5. The results of Leven's test to evaluate the equality of variance of groups

Variable	F ratio	Degree of freedom of nominator	Degree of freedom of denominator	Significance level
public information	0.232	1	158	0.631

As shown in Table 5, Leven's test shows the equality of variance of groups as observed F value is not significant and variance homogeneity is established and covariance analysis can be used.

Based on the information of Table 6, the comparison of the impact of two methods of teaching

regarding public information is significant statistically. Thus, teaching via mobile is effective than traditional teaching method. Based on significance of covariance analysis test, it is inferred that mobile-based teaching compared to traditional method has high effect on learning of public information of students. The third

question of study is supported. Mobile-based teaching has high effect compared to traditional method on learning of students. Also, at the end of questionnaire, survey is performed of the trained students by mobile (experiment group) and the results are shown in Table 7.

Table 7. Survey of experiment group students regarding mobile teaching

Questions	Very much	Much	Average	Low	Never	Sum
1-Can we use mobile for teaching?	19	38	17	6	0	80
2-Are you interested to receive the textbook by mobile phone?	12	24	31	9	4	80
3-Do you agree with receiving SMS regarding generation information on holidays?	21	42	14	3	0	80
4-When do you want to receive sms?	8 - 11	12-15	16 - 18	20 - 22		
	32	2	7	39		80

The results of Table 7 are as follows:

First question: Is Mobile applied in teaching? 74 students of experiment group in three levels (very much, much and average) believe that we can use mobile in teaching and learning and 6 people believe that mobile is used less in learning and teaching.

Second question: Are you interested to receive the textbook by mobile? 67 people in three levels of very much, much and average agree to learn via mobile. 9 people have low interest and 4 people are not interested at all.

Third question: Do you agree to receive SMS regarding public information on holidays? 77 people at levels (very much, much and average) receive SMS regarding public information on holidays and only three people are less interested to do it.

Fourth question: When is appropriate to receive SMS? IN this question, 38 people select 8 to 11 a.m., 2 people 12 pm to 3pm, 7 people 3 pm to 6pm and 39 people select nights for learning. These results show that most students know mobile effective on their learning and are interested in learning by this method as even they agree with mobile-based learning on holidays and other periods.

CONCLUSION

In a general conclusion, we can present the results of study as mobile is effective on increasing learning of students of Kharazmi University as not only the learning of students in pre-test and post-test is increased, by comparing this group (experiment) with control group (students of Allame Tabatabayi University) receiving traditional teaching, the results show the superiority of experiment group. In other words, both teaching methods (lecture and mobile) are effective on learning of learners but training via mobile has high effect on learning. This method increases the motivation, interest, attitude of students to learning. The results of survey of students to learning via mobile show that the students are interested in learning by this method as on holidays or other times, they are interested in mobile learning. As mobile increases motivation, excitement of learners in learning even in non-educational days, the lecturers should use less lecture teaching methods and identify the abilities and advantages of mobile in education and try to apply this new technology mostly.

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