

IS THE MOBILE BASED LEARNING CAN BE EFFECTIVE IN ACADEMIC LEARNING? A Study To Check if Mobile-Based Learning Is Desirable in Presenting Educational Workshops

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ABSTRACT

Mobile technology has made the effective possibility of using technology to support education and learning in universities and colleges in a way that it makes better chance of e-learning. While mobile devices are becoming increasingly utilized, many researchers and practitioners have incorporated m- learning into educational environments. The aim of this study is to make a mobile-based educational design in workshop plans and investigate its effectiveness from users' point of view.

Keywords: Mobile based learning, Learning, Higher education, teaching

Methods and Materials

All new instructors included in lesson plan workshops entered the study (20faculties). Then the main principles about lesson plan were designed in 10 SMS(short message service) and were given to them.Data collection was from two questionnaires,the first questionnaire was utilized to investigate the lecturers' knowledge about lesson plan principles in pretest- posttest by 8 multiplechoice questions and in the other one the advantages and disadvantages of M-learningwas tested by 10 questions on 4 point likert scale.The content validity of questionnaires were checked by 10 experts in this field and their reliability was checked by Cronbach's alpha ($r= 0.70$ and $r=0.82$)respectively.

Results

Results show that M-learning had influence on faculty members'knowledge promotion ($p=0.006$). The results verified that the most average of the advantages of M-learning are availability (2.2 ± 0.83), comprehensiveness (2.35 ± 0.71) and easy use (2.30 ± 0.073). The rate of members' satisfaction was also high (2.90 ± 0.71).

Conclusion

As a result, in attention to the effectiveness of M-learning on knowledge and users' satisfaction in teaching and learning, we recommend using this method in service training.

INTRODUCTION

Mobile learning is a wireless interactive learning to define technology that made it possible for users to work at unique activities in ways that provide effective use of this device in teaching and learning which were previously impossible (Pea & Maldonado, 2006).

As a Peters' view, mobile learning is an effective method of flexible learning model (Peters, 2007). Numerous events in using mobile for virtual learning have happened that the most important ones are:

Studying scientific books, creating connecting universities, fast transfer of data and its efficiency in scientific studies and Remote education and learning and having class in any time of the day or night (Keegan, 2006).

In recent years promotion of m-learning as a usual method has been publicized in most western universities that has dramatically reduced the cost of traditional education and time of education (Sharples, Taylor, & Vavoula, 2007).

The most important advantages of m-learning is that it lets users access their sources without having to be present in a specific place or time, it also legally lets them get connected to their desired educational system. Users can be educated through multimedia messages or text messages. Users use mobile as a device for education, but it also has some disadvantages as the educational content gets connected proportionately with a mobile capacity. On the other hand preparing detailed subject and educational content and presenting a system to give tangible services and reducing the cost of mobile accessory and net are the challenges of this educational system ((Kukulska-Hulme, 2007; M. Wang, Shen, Novak, & Pan, 2009).

Today mobile requirements with multimedia capacity and high resolution and high transfer rate is necessary for learning. Such requirements make the possibility to use mobile in education and has made it an effective tool for transferring data ((Kukulska-Hulme, 2007); (M. Wang et al., 2009)). In a study printed in 2004 in England it was determined that the majority of the 16-24 age group say that having a mobile is a must, and most of them are students in universities and colleges ((Walton, Childs, & Blenkinsopp, 2006)). Based on present statistics, the most rate of using mobile is in Sweden (1.3%) and the least is in Slovenia (44%) ((Kan strop, boye, & Nhr, 2007).

Mobile learning is a one aspect of distance education and subset of distance learning and also E-learning, thus these variables have to be taken into consideration ((Ismail, Gunasegaran, Koh, & Idrus, 2010)). Ulster Culstoo University in Ireland came to a dramatic success through using mobile messages in decreasing the number of failed students from university by informing them of the critical situation than asking them to be present in the university for that ((Keegan, 2006).

Also Dublin Technology College founded a unit to support engineering learning science by using mobile with different goals to gaining students' satisfaction. It maintains that many of teachers in the fields that were related to healthcare welcomed applying mobile as a facilitator and a way to reinforce learning process (Oshea, 2005).

Education system has had a successful history, and often leads to innovative teaching-learning activities, and problem resolution in the academic environment. The education experts offers educators an unparalleled opportunity to challenge past norms and think nontraditionally to meet the future (O'shea, 14 Apr 2011)

Iran University of Medical Sciences in Iran offered an educational program based on mobile which contained issues such as bacterial care system and dorsal digestion system bleeding by the use of mobile and for doctors' retraining ((Peters, 2007)).

The main objective of this study was to evaluate the impact of mobile based learning on teacher learning, their satisfaction, the advantages and disadvantages of this method on in-service teacher training program. In other words, this study identified an effective alternative to in-service courses and workshops for the teachers and determined whether it is appropriate for training workshops?

MATERIAL AND METHODS

This is experimental study (single group before and after) on all new teachers approximately 20 people subjected to methodology workshop were participated in this study by Purposive sampling. Data gathering were 2 researcher-made questionnaires in which the first one included faculty members' knowledge in the field of the principles and basics of lesson plan which had 8 multiple choice questions and its validity and content validity was prepared and studied by experts in the field of medical education. The questionnaires' reliability was obtained by getting a sample pilot and calculating cronbach's alpha ($r=0.70$) and was given to members in 2 stages, before and after training.

All of the question have one correct answer and the sum of correct answers showed teachers' knowledge. Another questionnaire was to investigate mobile learning's advantages and disadvantages which investigated faculty members' view after training and in different fields of mobile-based learning and education. This questionnaire concluded 13 questions in 5 likert scale (from never to high) all the questions about the advantages and disadvantages of mobile based learning. The content validity of this questionnaire was verified by experts in the IT field and its reliability was calculated as ($r=0.84$) by cronbach's alpha.

The prepared content containing key subjects about lesson plans with interactive multimedia designed and was sent to faculty members in a couple of successive days by short messages and after some days a post-test was utilized to check their knowledge about presented content and then their view about education and learning quality and then its advantages and disadvantages was investigated in the form of questionnaire. Inclusion criteria was all of new teachers who included lesson plans and exclusion criteria was other teachers who had experience about teaching skills. In order to analyze the data descriptive statistics to investigate the frequency and distribution of data and also analytical statistics (Wilcoxon test for studying differences within groups before and after training was used).

Analyzing data was done by SPSS15 software. Extracted proposal was approved by ethics committee and all participants were satisfied by participating in the project.

RESULTS

Distribution of data showed, 12 (60%) were male and 8 (40%) were female. Special field in 7 (35%) were clinical sciences, 8 (40%) nursing and others 5 (25%) were basic sciences. Mean knowledge of instructor in pretest (3.21) versus (4/89) in post test showed that the Training method affects teachers' knowledge. Due to small sample sizes, parametric statistics (WilcoxonTest) was used. The results showed that the teachers' knowledge from m-based learning after training was statistically significant ($p=0/006$). Instructors' knowledge before and after intervention showed that m- based learning had influence on faculty members' knowledge promotion ($p=0.006$). Table: 1

Table: 1
Instructors' knowledge before and after intervention

Knowledge	Mean of rank	Sum of rank	z	P
Before	9.04	108.50	2.76-	0.006
After	3.83	11.50		

Table: 2
Checking desirability of mobile-based education from instructors' view

Advantages	Never	Low	moderate	high
Informing	4(20%)	4(20%)	5(25%)	7(35%)
Meeting professional needs	4(20%)	6(30%)	10(50%)	-
repeated use	2(10%)	3(15%)	8(40%)	7(35%)
Preference to other methods	20%(4)	40%(8)	25%(5)	3(15%)
Simplicity	1(5%)	4(20%)	10(%50)	5(25%)
Comprehensiveness	2(5%)	9(45%)	9(%45)	-
Time saving	5(25%)	2(10%)	9(%45)	4(20%)
Self learning	1(5%)	4(20%)	10(%50)	5(25%)
Satisfaction	1(5%)	6(30%)	9(%45)	4(20%)
Disadvantages				
Being not readable	3(15%)	8(40%)	5(25%)	4(%20)
Lack of instructor	1(5%)	4(20%)	10(50%)	5(25%)
Not fit to practical skills	-	6(30%)	10(50%)	4(20%)

Table: 2 reports the advantage and disadvantages of m- based learning from teachers' point of view. Most of the teachers state that m-learning has high advantages as informing (35%) and repeated use (35%), and disadvantages as Lack of instructors (25%) .

Table: 3
The highest mobile-based learning average from instructors' view

Component	Mean (SD)
Time saving	2.2(0.83)
Simplicity	2.30(0.73)
comprehensiveness	2.35(0.67)

The highest mobile-based learning average from instructors' view show that comprehensiveness (2.30) has higher average than the others. Table: 3 Mean score of learner satisfaction was (2.90); that showed the amount of values is desirable.

DISCUSSION

The results of the study show that mobile -based learning has a significant effect on increasing faculty members' knowledge. The results of previous research in different m-based learning supports the positive effects of these educational methods. Green and Haannon & green, et al emphasized on the role of this kind of education on personalizing curriculum that elder people tended more toward this kind of learning, but youngsters need more encouragement from instructors (Green, Facer, Rudd, Dillon, & Humphreys, 2005; Green & Hannon, 2007) Instructors can plan more meaningful activities to provide the possibility of using the advantages of this technology comparing to its limits (Hartnell-Young & Vetere, 2006).

Instructors have the intention to make time and no more about mobile learning in the process of teaching (McFarlane, Roche, & Triggs, UK. [online] 2007).

In a research aiming at comparing two educational methods via mobile and lecturing on students learning rate, the results show that despite the fact that both lecturing training and mobile-based training have positive effects, mobile-based education was more effective on students' learning rate (Papzan & Soleimani, 2010).

This research approve our results about the efficacy of novel method to increase the user knowledge. Other researcher investigated how mobile could help learning in high school which had positive results. This research showed that they m-learning had good effects and its advantages were simplicity, possibility of repeated use, time saving in their views (Hartnell-Young & Heym, 2008).

This study confirms the positive effects of mobile learning on user training and in was harmony with our results.

Attwel also showed that 62% of learners tended to m-learning and mentioned that mobile technology can provide the possibility of communication for exchanging the experiences between learners. Also students who had learned through mobile had more passion and delight comparing to other classmates, and they had no worry and anxiety (Attewell, 2006)

In another research the rate of students' progress in those who had m-based education had increased comparing to others. In this research 35% of students tended to participate in the class and 655 liked to have m-based learning (Bharat, Lalita, & Kannan, 2006). Resent result about learner satisfaction confirmed by this outcome.

The other results approve the effect of this method on learning and emphasis that m-based learning had a positive and meaningful effect on students' learning rate (Mc Conatha, Matt, & Michael 2005). Also the results of empirical research show that m-based learning had more effect on students' learning comparing to electronic learning (L. Wang, 2009)

To compare m-based learning and lecturing in research, Karimi and colleagues' reported that lecturing has advantages like being affordable presenting the subjects directly and regularly and logically, increases speech skills in teachers and note-taking for students. m-based learning is more effective and has more meaningful influences comparing to lecturing. Although M-based learning has some disadvantages like being passive and not being suitable for training practical skills and reinforcing intellectual skills in high level. It also does not pay attention to individual differences (Karimi, Tavakol, & Alavi, 2006). These results confirm our results about mobile disadvantages about lack of instructor (passive) and not fit to practical skills.

In a study done by Kumar in India results show 72.2% considered m-based learning as helpful and a new chance in their learning. 66.2% thought that m-based learning has a fast feedback and 73.4% believed that mobile-based learning has more time and place flexibility and it is more learner-centered (Bharat et al., 2006). A major limitation of this study was limited samples available that the authors had to use. Teachers do not have enough time to work and complete the questionnaire. Also some completed questionnaires twice as they thought that it was hard to complete.

CONCLUSION

Considering the positive effects of this method on learning and according to the satisfaction of faculty members, simplicity of its use and availability, using this method in medical education is recommended.

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