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Research Article

The Effect of Mobile Learning on the Future of Learning in Iran

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Abstract: The aim of current research is the effect of mobile learning on the future of learning in Iran. By employing and developing information and communication technology in training and learning as one of the main fields of human development, at the beginning of 3rd millennium (BC), the concept of mobile learning emerged as one of the last and important human achievements. Though , it should be considered that success in mobile learning is not only depend on applying technical technologies and capabilities which provided by these tools for us , but also it needs education and training experts capabilities related to design and development of fortunes and proper learning environments. Mobile learning is one of developed branch of e. learning which in comparison with other types of learning, provides access to learning contents for learners and interaction with other current individuals in learning environment, easily. In present study, we discuss total aspects of this kind of learning and the possibility of employing this technology in Iran.

Keywords: E. learning, information and communication technology, learning, mobile learning

INTRODUCTION

Today, using mobile communication technology in various fields are increasing all over the world. Now, in the fields of education we can mention a lot of usages of mobile technology. These are include a range of various subjects from capability of wireless transfer of learning content and manage information to empower learners to communicate with lecturers or their counterparts while moving. Therefore it should be considered that success in mobile learning is not only related to utilized technologies and capabilities which provided by these tools, but also needs education and training of experts about designing and development of fortunes and proper learning environments. So here, not only we need correct understanding of learning theory and paradigm, but also, it is necessary to define effective usages of mobile technology which pays main part in education optimizing in new learning environment (Mastaneh and Mosule, 2009).

The evolution of handheld portable devices and wireless technology has resulted in radical changes in the social and Economic lifestyles of modern people. Today, many technological devices are produced in portable form and people have become accustomed to them. These devices are reshaping user's daily lives in different ways. But the development of digital technologies has so far been limited to social communication and few people have regarded mobile learning as a core pedagogical activity in higher institutions of learning. Although this model has been used as a minor adjunct to learning activities such as lectures and assignments, it is still not the primary mode of delivery in higher education. Currently, the instructional technology transmitted by means of mobile technology is mainly social and, to a lesser extent, economic (Ting, 2005). According to the above cases the aim of current research is The effect of mobile learning on the future of learning in Iran.

DEFINITION AND THE PLACE OF MOBILE LEARNING IN NEW EDUCATIONAL SYSTEMS

Considering the interests and personal needs of learners, various types of technology and educational environment are used to develop learning. Therefore, it can be more possible by composite using of present resources of optimizing education (Sheng *et al*., 2005).

Where information and communication technology can play an important role in creating environments related to learning by integrating of distance and face to face education , therefore above mentioned technology can employ as a basis for providing content and make synchronous or asynchronous contact and interaction between current members of learning community (Imran, 2007). Here, according to definition of Urdan and Weggen, we define e. learning as a concept

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presenting content and interaction by means of all current electronic media such as web pages, computers, virtual classes, while a definition presented by Clark Queen for mobile learning as a subset of e. learning seems proper. Mobile learning is e. learning by means of using mobile computable devices. This area is a joint between mobile computation and e. learning. Electronic resources are available every place and time independent from situation.However, in order to describe this new learning environment, various concepts are used which each of them implicate one aspects of this environment (Siau and Shen, 2002).

- **Wireless learning environment:** The word wireless implicitly in contrast with the concept of online learning , shows get rid of this learning environment from limitations of wires and cables to set internet connection, but this concept is largely vogue ad does not show the pervasive role in learning issue and the aspects of mobility of this environment (Georgiev and Smrikarov, 2004).
- **Mobile (movement) learning:** This term emphasize on accompanying of pervasive learning tools while moving or traveling , but ,just transferable learning tools, is not the reason to connect wireless tools with internet as a secondary feature of this new learning environment (Lehner and Nosekebel, 2002).
- **Ubiquitous computer:** This term emphasize on the gathering of two mentioned features in the same learning environment. However, none of above mentioned terms emphasize on another important feature. This main factor is modeling learners as active and creative participant's not only passive receivers of information in the fields of production and exchange of knowledge. In fact there is no term to define universe as a giant and integrate unit of production and transfer information. In this study, the term mobile learning should be perceived and interpret on this basis (Walker, 2007).

History and the importance of mobile learning: Coincide with quick growth and development of internet during past decade and experimental using of web facilities and email in education, the concept of e. learning as a new educational concept emerged in 90th decade (BC) and quickly turned into internationally accepted concept and even necessary method of presenting educational content in many educational organizations. During last decade, the quick growth of internet introduced new need for wireless communications and related technologies. When mobile phone introduced to market, suddenly, a significant development was observed in wireless communication technology, so that at the beginning of new millennium, gradually, in all over the world, phones and desktop computers will replaced by communication and technologies and mobile and wireless communicative devices (Eva, 2005).

New theory about learning: According to structuralism in learning, considering various media resources in information explosion era, the emphasize of education system on manipulation, integrity and more effective using of information and knowledge from various media resources in order to produce new knowledge is considered (Brown, 2003). And in this way, guiding learners for easier access to proper and desirable information is very important. However, teacher only considered as one of knowledge resource and his/her role, as well as transferring knowledge to learners, is facilitate learning and help learners to produce new knowledge. According to what is mentioned, it is clear that by means of new theory, educational organization should not focus their activity only on providing content for learners, but, they should emphasize on empowering In order to investigation, identification, manipulation and evaluation of current knowledge and integration of this knowledge in the world, job and their personal life to solve their problems and make scientific contact with others (Cal-Fasoni, 2001).

Mobile learning: Mobile Learning could be thought to be a form of 'informal learning', which can happen anywhere and anytime. In fact, this type of learning occurred all the time. Learning is through interaction with others. Learning activities that took place in an institution is considered informal when it involved asking colleagues for help, searching the network and Internet and through trial and error. Because this type of learning can happen anytime and anywhere, much of m-learning takes place as informal learning (Cavus and Ibrahim, 2009). Transforming Education in the Mobile Age in today's society Conversation in the digital world is not merely exchanging words, instead, it is a process of breaking down barriers that occur during learning; hence clearer communication would facilitate a more enriched learning environment. According to Sharples *et al*. (2005), when a learner acquired complete control of their educational experience, a more successful learning phenomenon could be considered occurred. This can occur through flexibility and the ability to conduct a conversation to exchange knowledge as well as to inform others. Mobile technologies enrich conversational environments and provide data collecting tools on the road or in the field. By using mobile technologies, both the range and reach of communication and discussion are enhanced. Stated that in establishing a theory of mobile learning, a critical first step in creating a theory of mobile learning is to distinguish features important to mobile learning systems as compared to other learning methods. First,

there is the mobility component (Chen *et al*., 2003). This affords users the opportunity to take control of their education and provides a new angle to the learning process. Second, the theory of mobile learning must consider that learning is not restricted to the classroom but can occur anytime and anywhere if there is an open channel for communication. Lastly, the mobile learning theory must take into account the necessity for powerful mobile devices, which are increasing in popularity and driving the demand for use of mobile devices. It was also pointed out that convergence between the new, personal, mobile technologies and the new conceptions of lifelong learning is important (Rezaei, 2012).

Mobile learning theory: Sharples *et al*. (2005) summarized that the user rather than the technologies must be mobile and the learning must be integrated with everyday life rather than take place on its own. Learning can foster goals as well as satisfy them. In addition, learning did not fall on one individual's shoulders; it can be distributed amongst many. The teacher-student relationship could be enhanced with multimedia communications as well as reviewing the teacher's assignments at the student's discretion on their mobile devices. Although mobile learning could be seen as a challenge to formal schooling, to the traditional classroom setting and to the curriculum, it could also provided supports to bridge the gap between formal and experiential learning, opening new possibilities for personal fulfillment and lifelong learning (Sharples *et al*., 2005).

Sharples *et al*. (2005) also pointed out an important convergence between the new, personal, mobile technologies and the new conceptions of lifelong learning. The utilization of mobile technology in the field of education has given a rise in a novel research topic in the domain of digital learning: mobile learning. It brought learning activities out of classroom and give learners freedom to access lessons at any time, from any location (Markett *et al*., 2006).

At the same time, several distance learning platforms have extended their services to support mobile activities (Chen *et al*., 2003). On the other hand, it has the ability to provide off campus activities, free from the restrictions of time and space (Frederick *et al*., 2001). The use of a mobile intelligent language learning environment for Arabic language was considered.

Advantages of wireless technology: To establish mobile learning system in university region, we need primary investment to provide two main parts of system: mobile learning device and wireless communicative technology. Due to presumption, most learners participating in project had mobile device by their own, previously. However, in order to begin project, we should have main reason to spend cost for establishing wireless communicative equipments on related region (Brown, 2003).

- **Mobility:** Mobile user or learner can move in various job environments or various course classes while keep access to internet, library resources, file transfer servers and other such resources. The range of this capability can include study rooms or rooms to hold conferences. The mobile technology referred to in this study is mainly more advanced cellular telephones. But there is other Forms of technology such as "smart" phones, digital cameras, flash-discs, iPods and Personal Digital Assistance Devices (PDAs). Mobile devices used to deliver higher education content and instruction can also function as audio players, media-players and digital cameras. Advanced mobile devices are furnished with Wireless Application Protocol (WAP) and Wireless Fidelity (Wi-Fi) capacities so that a user can connect to the Internet by means of his or her PDA (Trinder, 2005). The mobile cellular devices mentioned above have the capacity to link to the Internet and deliver content and instruction that can enable learners to learn at anytime and anywhere in a format that is culturally prestigious among people in the same age group. Most of the more advanced models can support a portable, digital and wireless lifestyle and mode of teaching and learning. It is precisely the mobility of these devices that makes them highly prestigious and therefore desirable as instruments of learning among learners in the same age group. In fact they are highly valued by young people in their early twenties because they are visible indicators of wealth, privilege, luxury and modernity. Mobile devices with advanced features like those mentioned above are therefore regarded as more trendy, fashionable and prestigious among these consumers than the standard desktop personal computers that connect to the Internet by means of landlines (Sharples *et al*., 2007).
- **Speed and easy establishing:** Employing wireless technology in old buildings can contrast with problems and significant cost saving of communicative technology development of internet. However, local network infrastructure which cabled previously in building can be used to provide required support from the places which have an access to wireless technology (Banks, 2008).
- **Mobility of learners:** E-learning mediated by personal computers is mostly bound by location and time (availability) because of the configuration of a personal computer. The computer has no wireless learning tool linked to the Internet, which means that one must always work in one place at a

particular time determined by availability and connectivity. But with mobile learning, learning can occurs at any place and at any time. The ordinary (non-mobile) personal computer with landline connections to the Internet is constrained by the places in which they are located and their availability. No portable personal computers are too heavy to move easily and so learners are compelled to work in the same place and during the time slots allocated to them by university authorities. By contrast, learning with mobile is a learner centric activity because it is both mobile and nomadic and not pedagogically teacher-centric as in the case of traditional lectures and hardware installed in one particular location under the aegis of the university's authorities. Ting (2005) makes the following remarks about the advantages of mobile learning: "The overall advantages provided by the mobile learning are [that it is characterized by] more flexible, accessible and personalized learning activities. Such advantages […] keep the learners engaged in the ongoing learning activities and enhance their productivity and effectiveness". Furthermore, Guralnich (2008) suggests that the designer would be better served if he/she considered the entire context in which learners will use particular m-learning program me. However, today's designers often tend to borrow design ideas from their e-learning experience. Mobile learning devices also have the capacity to enhance a learner's sense of individuality and community as well As his or her motivation to learn through participation in collaborative learning. These devices stimulate a learner's Sense of ownership of the content as he/she participates actively in a variety of social, collaborative and cooperative activities - all of which are centered on the mobile learning device. Educators and designers should address the needs of learners in this age of wireless communication and connectedness. Slogans such as "walk and use", "walk and talk", "just for me" and "just in time" usher in the new Phrases in education like "You ring, we bring" ushered in previous developments in society. Instructional theory in this mobile age should be learner-centric rather than technology- or teacher-centric. This is because, as Uden (2007) observes: "Mobile technologies offer new opportunities for students' educational activities in that they can be used across different locations and times". Students using mobile technologies are not only remote from their instructors; they also fully control the access of information on their mobile devices. In this light,, one of the main advantages of mobile learning is that it allows this generation of learners to enjoy a certain amount of freedom and independence.

- **Mobility of learning:** Researchers and practitioners of mobile learning are engaged in pioneering experiments for transmitting the full content of higher learning to students by means of mobile cellular devices. Walker (2007) points out that the advantages of mobile learning are not dependent solely upon the ability to use a portable and wireless communication device successfully. He argues that the kind of learning experienced by mobile owners is unique because it is received and processed within the context in which the learner is situated. The context is utterly individual-completely different from the rigid outlay of the traditional classroom or lecture room and the computer laboratory. The international conference on mobile learning entitled M Learn 2004 adopted as its guiding statement the desire to provide "learning anytime and everywhere", Attewell and Savill-Smith (2005)'s paper and those of other contributions were designed to indicate how such a vision could be fulfilled. Most of the studies presented at this conference focused on the description and development of theories that would support the practice of mobile learning and the design production of mobile learning materials and systems.

Mobile learning devices have also enriched the theory and practice of e-learning. Contemporary consumers of higher education in developing countries almost always use mobile learning devices as adjuncts to e-learning in higher education. Sophisticated mobile devices are currently capable of delivering a comprehensive range of e-learning materials by means of web connections, infrared and Bluetooth transmissions. For Ally (2005) "mobile learning [is at the] intersection of mobile computing and e-learning; [it provides] accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning and performance-based assessment". There are two well-publicized convergences that are affected by mobile technology: Firstly, a convergence between mobile technologies as learning and instructional design and the marketing of mobile computer-communicators are combined into a single device. This device is able to access the Internet, function as a telephone, camera, video and audio player and perform wireless computing tasks.

Secondly and equally importantly, a "convergence is occurring between the new personal and mobile technologies and the new conceptions of learning as a personally-managed lifelong activity" (Sharples *et al*., 2007).

- **Operation flexibility:** Wireless technology can provide flexibility in computers networking according to flexibility of both laboratories of

desktop computers and mobile computers. This can be lead to employ complementary learning tests in every where such as job environment and learning class.

- **Decreasing preservation costs in long term:** Total cost of establishing and preserving wireless technology infrastructure in learning environment will be lower than equipping old buildings with cable. Since, wireless access points can be changed if necessary, learning places can be used for another applicable purpose later, without waste of total cost due to cabling cost.
- **Scalability:** Wireless local network, at first, can be established in small scale and then gradually as required and due to providing required cost, developed in size and complexity. This can be true for development of lateral equipments of wireless technology like access points (Grison and Jordaan, 2009).

It should be considered that summarizing learning content in order to set it in form of simulated interactive operation inside mobile device and then establishing permanent interactive communication with user in order to support his/her action may be inevitably costing, even in some cases these costs may lead to total review of choosing communicative technology and communicating device. However, it should be considered that mobile learning and support of action can be happened in both forms of online (continues or occasional) or offline (Attewell, 2004).

Therefore, the possibility of using content in the form of offline is a main necessity to decrease learning cost. Mobile learning is a developed branch of e. learning which in comparison with other types of e. learning can provide access to learning resources for learners and make easier connection between current members of function communities. This issue is apparently identifiable according to wide communicative and transactional capability which related devices and tools of mobile learning provide for their users. For instance , now the latest development in mobile phone technology provide the possibility of sending and receiving multimedia content such as sound , graphic and video show by means of multimedia message sending system. In general, the capability of communicating by email and internet independent from related device is a key to develop mobile learning technology and the morality and necessary standards to use devices, communicative facilities and learning content are mentioned in this scheme, precisely and specifically (Halkett, 2002).

Mobile learning in higher education: The most important yet sophisticated concepts for designing instruction in this context are identifying the technology, learner and learning material as well as mobile technology such as portable devices. It also involves identifying learners who are and able to understand and interpret learning materials. In general, mobile learning-or m-learning- can be viewed as any form of learning that happens when mediated through mobile devices and a form of learning that established the legitimacy of learners (Alexander, 2004).

These are the developments that have made mobile devices strategic tools with the capacity to deliver higher education instruction in a way that was never anticipated when the first prototypes of these devices were designed and marketed. Designers can deliver successful higher education products to the present generation of learners, by means of a technology, distinctively adapted for its own personal (mostly social) purposes. This makes technology a particularly potent tool for the delivery and reinforcement of content that would otherwise be identified with the higher education "establishment". Devices "such as mobile phone and mp3 players have grown to such an extent over recent years and are gradually replacing personal computers in modern professional and social context" (Attewell and Savill-Smith, 2005). Modes of communication that were spontaneously developed by the younger generation have been subverted to serve the purposes of transmitting higher education. Such structural changes in the delivery of higher educational instruction add a powerful tool to the arsenal of available means that educators can use to make delivery more efficient, personal and culturally acceptable to those who pioneered these new modes of text delivery (Fullan, 2007).

These fundamental changes pose new problems to the designers. What new design paradigms and meanings can be attributed to the use of mobile technology? How can we appreciate their full significance within the context of traditional instructional design theory? Before the development of new forms of information and computer technology such as the current mobile "smart" cellular telephones, the design paradigms by means of which the delivery of higher education was understood remained essentially static. The extraordinary potential inherent in mobile devices, anticipate radical changes in the very structure of educational dynamics especially in the way in which people interact with one another in society. The kind of informal learning through the use of mobile devices makes it an even more potent tool of educational communication than the customary forms and modes of traditional education. These revolutionary changes developed out of the unforeseen significance of human social life generally more "mobile", creative and opportunistic, than the formal modes of traditional education.

Table 1 encourages the designers to ask the following questions as they reflect on these new modes of educational delivery: "What does this new mobile technology bring to learning?" One of the most significant answers to this question is: "New

Table 1: Convergence between learning and technology (Sharples *et al*., 2007)

New learning	New technology
Personalized	Personal
Learner-centered	User-centered
Situated	Mobile
Collaborative	Networked
Ubiquitous	Ubiquitous
Lifelong	Durable

technologies allow us to develop full digital records of our lives and experiences" (Beale, 2007). Highlight the changes that one can expect to occur in consumers of higher education when "tomorrow's learners will have access to a dynamically changing repertoire of devices and services that will differ in speed, processing power, monitoring (and other outputs) characteristics. As our engagement with technology changes with time, mobile learning becomes a function not only of time, but also of the momentarily available and dynamically changing technology" (Laouris and Eteokleous, 2005).

For Banks (2008): "further studies are painting a picture of today's youth becoming increasingly comfortable and accepting of their new digital lifestyles, powered by technology such as mobile phones. These phones are, enriched by portable entertainment devices such as iPods, digital cameras, Sony PSPs and Nintendo's Game boy. Friendships are made, maintained and lost online often in virtual worlds and on social networking sites such as MySpace and Face book. Much of what we are seeing today-generally out of the classroom but increasingly in it-is technology driven, but this technology is not universally accessible to all" (Banks, 2008). If Banks's vision is correct, then more and more institutions of higher learning will embrace the potential inherent in emerging wireless and mobile technologies for the purposes of higher education. Despite the importance of mobile wireless technological devices as the sole provider or as an adjunct provider of higher education in the not-too-far future, there are still those who refuse to recognize the potential of this emerging form of educational delivery.

RESULTS AND DISCUSSION

In the era of globalization where rapid technological innovation occurs, multiple forms of literacy are becoming increasingly manipulated. Reasonably, many adults who want to learn are challenged by lack of time, location flexibility and convenient access. Current mobile technologies can tackle these issues through the mobile learning, which supports anytime, anyplace learning. To better ensure quality in mobile language learning, it is essential to explore and define its effectiveness and characteristics. Moreover, the instructional design strategies for handling learning contents and limitations of mobile technologies should be figured out.

CONCLUSION

This study showed that mobile learning according to educational support and pervasive access to learning resources, can make possible learning every places and time and also, because of strong media communication and interaction between members of learning groups, this kind of learning quickly showed itself in structuralism framework of learning model in new learning communities. However, it should be considered that this technology is not a suitable tool for presenting large content information which learner does not need immediate access to them and before presenting content it is necessary to be transactional in form of small informational parts. M-learning has already started to play a very important role in e-learning in Iran. It should be noted that m-learning has brought e-learning to the communities of Iran-to learners that we never imagined as e-learning learners just a few years ago. M-learning is the gateway to e-learning for most Iranians as the rapidly growing wireless infrastructure fulfils the access needs more and more. Iran is actually from an unwired, non-existent e-learning infrastructure to a wireless e-learning infrastructure. The statistics in this regard are already significant proof of the leapfrog in process. The role of m-learning in the future of e-learning in Iran should not be underestimated. M-learning in Iran is a reality that will continue to grow in form, stature and importance. It will become the learning environment of choice. Since Iran is a wide country and there are desert and impassible mountain areas for cabling telephone lines in order to connect users to internet, in one hand and quick connection to internet, lower cost, easy using and extensive market and supporting mobile phone in comparison to desktop computer in our country, Iran, in the other hand, make us to act seriously about more using of this device in our country. For this purpose, the writer suggests that macro guideline design should be planned in order to develop mobile learning project all over the country by participation of committees of professors and experts in information and communication technology which considers following important priorities:

- Planning and formulation common policy in order to apply in mobile learning environment due to rules, norms and principles.
- Planning and operating mobile learning management systems and personal ports for users and generalizing this kind of learning in society.
- Identifying necessary goals and policies of administrative and academic support of various kinds of information exchange such as MMS, SMS in mobile learning environment.

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