*SHORT COMMUNICATION*

# Mobile Learning in Knowledge Development Scenario

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## ABSTRACT

Mobile devices like mobile phones, iPods and PDAs can have more processing power, and more interesting applications than were commonly available on desktop machines a decade ago, and teachers and educators are sensitising their potential to be used as powerful learning tools. However, the application of mobile phones, in this globalised era of 21st century, in context of learning must take into account several factors. Above all other things, we must consider how mobile learning can be used to provide learners with better opportunities and enhanced learning outcomes. This paper describes the following areas related to mobile learning: differentiation between e-learning and m-learning; classification of mobile learning activities, using the themes "record, recall, relate and reprint" (the four R's of mobile learning); the parameters for developing mobile learning and categories of mobile-learning.

**Keywords**: Knowledge development, ipods, PDAs, four R's, mobile-learning

## 1. INTRODUCTION

In this technological era, educators and technologists are keenly interested in how wireless and mobile technology can enhance the way people learn and interact with one another. It is true to say that these mobile-learning (m-learning) technologies (e-learning using mobile devices and wireless transmission) can potentially provide significant opportunities for learning and collaborative interaction. But unluckily technology is showcased as demonstration systems in various experimental e-classroom initiatives, and the penetration in general settings is painfully slow. In addition, many m-learning technologies are often limited to content delivery onto mobile devices, missing the rich potential for more interactive learning paradigms.

## 2. M-LEARNING AND ITS MEANING

Mobile-learning is the next progressive step from e-learning or is simply an advanced tool that integrates with e-learning. In either case, m-learning is a new and unique component of distance learning. Zaheer Polsani [1] defined M-learning as "….a form of education whose site of production, circulation and consumption is the network". He also revealed that m-Learning has its so many applications in the different spheres of life, i.e., business, industry, education, health etc. Durhand Traxler [2] defined m-learning as "…any educational provision where the sole or dominant technologies are handheld." He also quoted that m-Learning is the learning through the use of mobiles where high technology is utilized up to the optimum level from educational point of view.

Lewis Sharples [3] defined m-learning as "…a process of coming to know, by which learners in cooperation with their peers and teachers construct transiently stable interpretations of their world." He emphasized that mutual cooperation of the teachers and the learners come in close affinity by the mobiles and make so many interpretations and solve various dominant problems of the world.

## 3. FEATURES OF MOBILE LEARNING IN MODERN PERSPECTIVES

From technological perspective, handheld computers and personal digital assistants (PDAs) are more affordable today than before. With respect to pedagogical perspective, m-learning supports a new dimension in the educational sector. Followings are some of the major salient features of m-learning:

✠ Initiative of knowledge acquisition.

✠ Mobility of learning setting.

✠ Interactivity of the learning process.

✠ Integration of instructional content.

✠ Immediate and urgent need of learning.

These features of m-learning make it quite different from the traditional classroom learning atmosphere where all educational activities are carried out at a designated time and place.

## 4. M-LEARNING VS E-LEARNING

In the modern age of technology, e-learning is being replaced by m-learning, which is the new innovative tool in learning process in educational institutions. An elaborative definition by Urdan and Weggen [4] provided sufficient basis to distinguish m-learning from e-learning: term e-learning includes a wide range of applications and processes, including web-based learning, virtual classrooms and digital collaboration, etc.

E-learning can be defined as the delivery of content via electronic media including Intranet, Internet, Extranets, audio-video tape, satellite broadcast, interactive TV, and CD-ROM. M-learning on the other hand is a subject of e-learning. It is the macro concept that includes online and mobile learning environments. In this regard, Alexander Quin [5] explained m-learning as e-learning through mobile computational devices: palms, windows CE machines, even digital cell phone. He aptly remarked that mobile learning is indeed an e-learning because under this learning various electronic gadgets as well as computer software are utilized to enhance learning process.

## 5. PARAMETERS FOR M-LEARNING

The mobile-revolution is finally here in the form of m-learning, which is a natural extension of e-learning. In a span of five years, mobile learning has made an exponential leap from theory explored by academicians to a real contribution to learning. Four basic parameters for production and development of m-learning are:

✠ Social interaction: The data can be easily sent to friends, colleagues and others via short messages. You can exchange data with other people and gain considerable knowledge.

✠ Connectivity: Connectivity plays an extremely important role and is the backbone of m-learning. With the help of this connectivity network, one can connect to data collection devices, other mobile

phones, and to a common network.

✠ Sensitivity to the context: M-learning has the ability of gathering data unique to the current location, environment and time, which includes both types of data—real and simulated.

✠ Portable: Since mobile phones can be carried easily everywhere information access through this platform is easy and quite fast.

## 6. THE FOUR R'S OF MOBILE LEARNING

Mobile learning in the words of Durhand Sharples [5] takes into accounts the learner's mobility. m-learning is equally valid when accomplished with a pad of paper and a pen, if that is the appropriate resource for the mobile learner. In comparison to "Three R's" of the essential pre-net generation skills (reading, writing and arithmetic), there are "Four R's" of net generation learning which reflect the current socio-cultural shifts in thinking and learning for an increasingly mobile 21st century. These are:

### 6.1 Record: The learner as a gatherer and builder of new knowledge

(i) The learner may use a portable device to capture, preserve, note, memorize or create information.

(ii) The information may be recorded on the portable device itself; or the portable device should serve as a conduit for storing the information remotely.

(iii) Underpinned by a constructivist Theory of Learning.

### 6.2 Reinterpret: The learner as an analyst of existing data to discover new knowledge

(i) The learner may use the portable device to discover, process or enhance existing data so that it is transformed into new information, or "remixed" to enhance learning. In these conditions, the mobile device enhances or supplements the learner's own senses or processing abilities.

(ii) Underpinned by a constructivist Theory of Learning.

### 6.3 Relate: The learner as a user of existing information and resources

(i) The learner can use the device to communicate directly and synchronously or access asynchronous communication services.

(ii) They can also recommend and share resources, e.g., linking mobile devices (usually wirelessly) and sending a file from one to the other.

(iii) Communicate and collaborative: underpinned by a social Constructivist or Connectivist Theory of learning.

## 7.  BENEFITS OF M-LEARNING

Some of the major benefits of m-learning are:

✖ Mobile phones, PDAs or tablets holding notes and e-books are lighter and can facilitate the whole m-learning process with ease unlike bags full of files, papers and text-books.

✖ Writing with a stylus pen is more effective than using keyboard and mouse.

✖ Mobile devices can be used anywhere, any time, including offices, homes or when in transit.

✖ These devices engage learners through mobile phones, gadgets and games devices such as game Boys. It makes the device invaluable.

✖ This technology may contribute to combat the digital divide, as mobile devices are generally cheaper than desktop computers.

✖ The size, shape, weight, and portability of mobile devices have made them extremely effective for users with permanent or temporary disabilities.

✖ SMS can be used to access information to staff and learners more easily and quickly than phone calls or e-mails.

## 8.  DISADVANTAGES OF M-LEARNING

Despite the paramount importance of many benefits of m-learning in education, there are the following drawbacks also:

✖ The memory or the storage capacity of m-learning is limited.

✖ Discharged batteries can result in loss of important data as there is the need to charge regularly.

✖ It is quite difficult to do job on graphics.

✖ Lack of common platforms, i.e., horizontal screens with some handheld computers, and small scale screens with mobile phones are difficult to operate.

✖ The market is fast moving so devices are becoming outdated quite quickly.

✖ When using wireless networks, bandwidth may degrade with increasing users.

## 9.  CONCLUSION

In the knowledge industry, globalization, privatization and liberalization has too much affected the Indian economic structure in general and education sector in particular. ICT (information and communication technology) has given birth to m-learning, which plays a central role in enriching the learning experiences. The learners in various countries who have been disconnected with each other are having connections with any person at any place and at any time. M-learning being the recent technological innovation in classroom situations will help teaching-learning experiences in the productive manner in the future.

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