

## M-LEARNING: A FIELD YET TO BE EXPLORED

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### **Abstract:**

*There is a dire need for integrating mobile technology in the teaching-learning process at Higher Education Level. Mobile technologies can fulfill the general requirements to support contextual life-long learning by being highly portable, individual, unobtrusive and adaptable to the context of learning and the learners' evolving skills and knowledge. M-learning embraces the idea of anytime, anywhere and anybody learning. M-Learning is characterized by the ability to learn through portable devices. Technology has continued to play a pivotal role in teaching and training, though mobile technologies and devices have their own share of advantages and also disadvantages.*

### **Introduction**

The new millennium is marching ahead with new hopes and expectations. Modern technology has become an inevitable part of our lives. In this context, Higher Education for this century in the new information era really needs a lot of rethinking on modernization, especially in the wake of growing globalization and the implied demand for global citizenship. Even Indian government has realized the potential of higher education and has introduced many reforms in this field.

Wireless technologies are revolutionizing education. They are transforming the traditional ways of learning and teaching in to 'anytime, anywhere and anybody' learning. Now the terms like 'whenever I want', 'wherever I want', and 'however I want' indeed impose new requirements not only in the technological and educational framework, but also in the way in which all of them (learner-teacher) interact and communicate.

With technological advances and steadily decreasing cost mobile phones are emerging as a viable option for m-education. For this we have to realize that Mainly, two kinds of words are associated with mobile technology - 'portable', which means that we can carry these devices that we call 'mobile'. Secondly, 'wireless', i.e. there are no wires in the devices. From the point of 'portability' there are many devices which can be used for educational purposes, such as Palmtop PC/Notebook, Laptop, Tablet PC, Cellular phones, camera phones, Smart phones, GPS devices, , Personal audio players, and Handheld audio & multimedia guide, Notepad, I pad etc. Major

applications of mobile phones such as Message Services, Computations, Radio, Video, TV reception, m-paper, Voice call, Print Services, Internet, e-mail, audio-record & play, can be integrated in the teaching-learning process. By this we can achieve a new means of educational delivery system called – “m-Learning”.

### **M-Learning (Mobile-Learning)**

From a pedagogical perspective, m-learning supports a new dimension in the educational process. It embraces the idea of anytime, anywhere and anybody learning. Some of the definitions of mobile learning are as under :-

- Learning that happens across locations or that takes advantage of learning opportunities offered by portable technologies;
- Any service or facility that supplies a learner with information, educational content through mobile phone that aids in acquisition of knowledge, skills and culture regardless of location and time;
- Learning on move; and
- Any educational provision where the sole or dominant technologies are handheld or palmtop devices.

### **Characteristics of m-learning include:**

- Urgency of learning need;
- Initiative of knowledge acquisition;
- Mobility of learning settings;
- Interactivity of the learning process;
- ‘Situatdness’ of instructional activities; and
- Integration of instructional content.

### **Modes of M-Learning**

M-Learning is characterized by the ability to learn through portable devices. Technology has continued to play a pivotal role in teaching and training, though mobile technologies and devices have their own share of advantages and also disadvantages. There are many different types of m-learning -

- Communication through SMS between two mobile phones, whereby one can send or receive text messages of 160 characters.
- Extended form of SMS – MMS (Multi-Media Messaging Service). In this technology, text messages and graphics both are included.
- WAP enabled mobile phones that can access the Internet through deploying protocol of international standard.
- Personal Digital Assistant (PDA) devices that function like mini PC compatible machines, like Palm OS or Pocket PC Mac OS.
- Bluetooth facilitates PDA message sharing from one mobile device to another.

- MP3 file format for compression and sharing
- PDA CAMs

Experts prognosticate that in the foreseeable future the markets will have 4G phones (4th generation mobile phones) capable of 100 megabits per second in multi-media transmissions.

### Advantages

- **Portability:** Mobile technology extends learning beyond the walls of class-room. It offers greater flexibility in where and when learning happens;
- **Collaboration :** Handheld devices allow the learner groups to distribute, aggregate and share information with ease, resulting in more successful collaboration;
- **Motivation:** Learners show increased self-directedness in learning and take the initiative in finding ways to use the handheld devices for learning. It 'light-up' their enthusiasm;
- **Disabled friendly:** To a disabled learner, the added value of m-learning is many-fold;
- **Economical:** It is a fact that most handheld devices are more affordably priced than larger systems, and already a major percentage of the population owns them.
- **Personal:** Mobile technology is private and personal in use and have none of the student self-image problems that may be associated with traditional assistive technologies; and
- **Instant:** The learners and teachers can communicate and deliver e-mail or SMS instantly.
- **Just in time learning:** Learning at the point of need.
- **Ability to access learning (almost) everywhere:** This means down time can be leveraged for learning.
- **Potential to be two way and multi-media:** Video, PowerPoint, podcasts, and quizzes are all potential outputs to iPhone devices. This provides a great deal of flexibility for mobile development.
- **Potential for location based learning:** This means the phone can alert the person when they are near a potential learning experience based in the context in which the learning will be used—which potentially can help retention and return on investment.
- **Anywhere, Anytime learning:** Mobile devices allow students to gather, access and process information outside the classroom. They can serve as a bridge between college, and home environments. Effectively they enable learning in a real-world context.
- **Personalized learning experience:** Students are different from each other and also their approach and style of learning skills widely differ. Students are always looking for learning approach that should be adaptable to their interest and skill level. Mobile, being a personal device supports differentiated, autonomous, and individualized learning.
- One can access lessons, video clips and audio libraries from anywhere, including public places and moving buses and trains.

- Interaction with fellow students and instructors will be a great help. It is an accepted fact that learning is made easier when information is shared and questions answered through a sort of combined study. This helps several students to work together on assignments even while remaining at far-flung locations.

- Portability is a very big plus, as a PDA is compact and very lightweight, and enables a student to take notes or enter all types of data directly into the device.

- There is a psychological factor; owning handheld devices increases student motivation and deepens the commitment to using and learning with them. Further, the present generation of students has a fascination with handhelds like PDAs, mobile phones and similar carry-around devices. The learning material is mostly colorful and inviting which may prompt students to go back and forth and practice more.

- Flexible hours of learning are indeed a great boon as students can access the system anytime 24-7 and from any location. What is more, teacher support can now be expected even outside classrooms and other learning environments.

- Each student can learn at his or her own pace - some student may be slower learners. The students who pick up things fast need not waste time going repeatedly through basic lessons.

- Yet another blessing is a huge saving in the cost of learning materials and also commuting expenses.

- Learners can interact with each other and with the practitioner instead of hiding behind large monitors.

- It's much easier to accommodate several mobile devices in a classroom than several desktop computers.

### Challenges

Mobile phones act as medium to assist learner in combining work, study and leisure time in meaningful ways. But mobile learning poses challenges to the learners and educators. Some of the challenges are

- **Limiting physical attributes:** Physical design of mobile phones like restricted text entry, small screen size, and limited battery life, the number of keys on the mobile, memory storage, processing power have impact on usability of learning applications. The limitations can distract children from learning goals.

- **Cultural norms and attitudes and open:** Parents and teachers are not yet convinced with the potential of mobile devices in learning areas. Teachers consider mobiles as distractions and educational institutions restrict or stop allowing usage of mobile in school. This attitude prevents wide adoption of m-learning.

- **Possible negative aspects of mobile learning:** There is limited amount of data to rule out any possible cognitive, social, and physical challenges that might arise due to m-learning.

Open questions on data privacy issues, physical health concerns do not have standard solutions and there is potential for distraction or unethical behavior.

- **Difference in mobile technology and application access** There is a wide diversity among mobile technology. This becomes challenge for teachers and learners to evaluate the effectiveness of m-learning and the producers who facilitate such learning. One needs to look for multiple delivery options like GPRS, bluetooth and data card to deliver content on the mobile.

- **Technical challenges:** Connectivity; Battery life; Interacting with small devices; Displaying useful contents in small-screen devices.

- **Interface size and immersiveness.** Interface richness/immersiveness and how does it compare versus more traditional options like desktop/laptop. This question is critical to the engagement factor of the learning.

- **Potentially never disconnected.** There are advantages to having time to incubate. The need for employees to be plug-in in their downtime means that they may not get the opportunity for incubation, which is critical to the creative process. Also, learning requires time for incubation, critical thinking, and reflection. Access to an abundance of mobile learning and information may tempt learners to abandon traditional informal learning or time for deep reflection. Although, perhaps this can be avoided by leveraging the mobile for deep reflection.

- **Challenges of initial cost threshold.** (ie the cost of development or the cost of buying cell phones which meet your technological constraints) However, low cost options like Twitter and mini-podcasts can provide alternatives which are relatively low cost.

- **The issue of return on investment (ROI) and tracking success.** This is critical to getting future funding and making strategic learning decisions for your organization and target population.

- **Social and educational challenges:** How to assess learning outside the class-room; How to support learning across many contexts; Developing an appropriate theory of learning for the mobile age; Design of technology to support a lifetime of learning; and Tracking of results and proper use of this information.

### **Educational courses suited for m-learning**

All courses may not be suited to m-learning environment. Purely technical and very practical courses are a misfit for m-learning. Short courses and theory and information type courses are suited to the m-learning environment. Similarly essay type assessments do not go well on mobile, while multiple choice questions suit the best on the mobile.

Some pointers to design the m-learning course content and structure are:-

- Keep it Simple
- Avoid large amounts of data
- Use short words

- Avoid underlined text as this will be mistaken for Links
- Organize large amount of data in to sections for easy navigation.
- Build mechanisms to confirm usability of the content on the application.

### Conclusion

In future, due to the innovations and advancement in nano-technology, the mobile phone technology will replace most of the electronic instruments. By teaching through the mobile phones we can prepare the learners for the real world and we can virtually mobilize towards success. M-learning is a field yet to be explored fully by incorporating the same into the mainstream of education and training by the universities.

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