

e- Learning in Teacher Education: Learning through Mobile Handset

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Abstract

The term M-Learning, or "mobile learning", has different meanings for different communities. Although related to e-learning and distance education, it is distinct in its focus on learning across contexts and learning with mobile devices. One definition of mobile learning is: Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies. In other words mobile learning decreases limitation of learning location with the mobility of general portable devices. The term covers: learning with portable technologies including but not limited to handheld computers, MP3 players, notebooks and mobile phones. M-learning focuses on the mobility of the learner, interacting with portable technologies, and learning that reflects a focus on how society and its institutions can accommodate and support an increasingly mobile population. M-learning is convenient in that it is accessible from virtually anywhere. M-Learning, like other forms of E-learning, is also collaborative; sharing is almost instantaneous among everyone using the same content, which leads to the reception of instant feedback and tips. M-Learning also brings strong portability by replacing books and notes with small RAMs, filled with tailored learning contents. In addition, this kind of learning is engaging and fun. Therefore, it is simple to utilize mobile learning for a more effective and entertaining experience.

Introduction:

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 or m-learning has made an exponential leap from theory explored by academicians to a real contribution to learning. Globally speaking, the kind of penetration that mobile phones have reached is astounding and no other device can come any closer, not even computers. No demography is immune from the mobile phone and it has slowly become associated with the youth in a bigger way. This kind of digital communication was unthinkable almost a decade back. M-learning has the potential of taking learning and knowledge across geographical boundaries and generations due to the fact that it can be accessed with ease. This brings us to the question what is m-learning and how effective it really is. In the basic sense of the term, it means learning through the use of mobile devices and is targeted at people who are always on the move. This kind of training can be given through mobile phones, PDA's and digital audio players and even digital cameras.

Now let's take a step back into the past and ponder over its origin. M-learning actually took roots during a Pan-European research and development program aimed at a target audience of 16-24 age groups. This was the group that was at a risk of social exclusion in Europe. There are five basic parameters for production and development of m-learning and they are:

- **Portable:** If you are using a mobile phone or a PDA, then it's easier to carry it along with you everywhere including the restroom. This makes information access through this platform easy and fast.
- **Social Interaction:** This kind of data can be sent to your friends, colleagues and others via short messages. You can exchange data with other people and gain considerable knowledge.
- **Sensitive to the Context:** This has a capability of gathering data unique to the current location, environment, and time. This includes both types of data - real and simulated.
- **Connectivity:** Connectivity plays an extremely important role and is the backbone of the m-learning project. With the help of a strong connectivity network, one can connect to data collection devices, other mobile phones, and to a common network.
- **Customized:** The most unique capability is to be able to offer customized learning information.

The Benefits Offered by M-Learning

It offers an interactive learning experience where learners can interact with each other. It's easier to accommodate several mobile devices in a classroom than several desktop computers. It is not always easy to work on a computer sitting in a far off village or town in wilderness, but mobile can be accessed anywhere. Mobile phones, PDAs or tablets holding notes and e-books are lighter and can facilitate the entire m-learning process with ease unlike bags full of files, paper and textbooks, or even laptops. Writing with the stylus pen is more effective than using keyboard and mouse. A range of possibilities arise out of this like sharing assignments and working as a group; learners and practitioners can e-mail, copy and paste text, or even 'beam' the work to each other using the infrared function of a PDA or a wireless network such as Bluetooth. Mobile devices can be used anywhere, and anytime, including at offices, home, or when in transit. These devices engage learners - through mobile phones, gadgets and games devices such as Game Boys. This makes the device invaluable. This technology may contribute to combating 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.

The Disadvantages of M-Learning through Mobile Devices are:

The small screens of a mobile or PDA limits the amount and type of information that can be displayed at a given time. The memory or the storage capacity is limited vis-à-vis a computer or laptop. It is important to have fully functional devices and batteries have to be charged regularly. At times, a discharged battery can result in loss of important data. It's difficult to work on moving graphics, especially on mobile phones, although 3G and 4G will eventually facilitate this. Bandwidth may degrade with increasing users when using wireless networks.

Scope of M-Learning

But then every new technology or technology driven platform or development will find obstacles on the way. Mobile learning is currently the most useful as a supplement to ICT, online learning and other traditional learning methods, and is playing a central role in enriching the learning experience. It is now widely believed and has been proven in various countries that mobile learning could and has been a huge factor in getting disaffected young adults to engage in learning, where traditional methods have failed. This is the new world and everything is changing – the market, the need, the people. M-learning is the future. The “buzz” about corporate mobile learning grows louder with each day. Organizations no doubt recognize that mobile technology for learning has merit. Handheld devices have the potential

to effectively “push” and “pull” information and deliver learning whenever/wherever employee needs arise. Yet, despite all the excitement and curiosity, few corporations have fully embraced mobile learning. We are left wondering: when will corporate investments catch up with all the excitement? For what applications/circumstances does mobile learning work? We are eager to see how mobile technologies will impact corporations globally. The potential is enormous

Seven Perfectly Balanced Motivating Principles of M learning

- Putting the learner at risk – This is probably the bottom-line strategy that when applied can change the scenario. It is important and critical to put the learners in decision making scenarios. This will give them ample responsibility to shoulder and the factor of losing will help them to pay attention. Create risk – achieve involvement!
- Relevant content – One of the key factors is how you select the content according to the need of each learner. If the content is unimaginative or cannot capture their mind, then the entire exercise will be futile in terms of objective.
- Interesting context – The more interesting the training is, the more captive the environment will be for the learners. The more they will understand and grasp to use it for the benefit of the organization. To make the context interesting, humor, music, animation etc can be used.
- Infomercials – Display e-learning marketing collateral in the form of pictures or in a flash or movie format. The infomercials can be mailed to the employee or displayed on the Intranet. Regular viewing will create an enthusiasm in the target audience and going through with the entire e-learning program will become easier.
- Provide Feedback – Feedback is probably one of the most crucial parts of the entire e-learning process. Just saying, “Good Job” will not be enough. It is important to communicate what was good about the work and how it can be made better.
- Judgmental error – This error can always be avoided at the onset. In a situation where an employee goes through their e-module training and gives a test, he/she would be probably more eager to know the results. The test results might not be as consequential as the waiting period. And at times, the de-motivating factor is the long waiting period.

Uses of M-learning

M-learning is convenient in that it is accessible from virtually anywhere. M-Learning, like other forms of E-learning, is also collaborative; sharing is almost instantaneous among everyone using the same content, which leads to the reception of instant feedback and tips. M-Learning also brings strong portability by replacing books and notes with small RAMs, filled with tailored learning contents. In addition, this kind of learning is engaging and fun. Therefore, it is simple to utilize mobile learning for a more effective and entertaining experience.

The value of mobile learning

It is important to bring new technology into the classroom. It will be more light weight device compare to books, PCs, etc. Mobile learning could be utilized as part of a learning approach which uses different types of activities (or a blended learning approach). Mobile learning supports the learning process rather than being integral to it. Mobile learning needs to be used appropriately, according to the groups of students involved. Mobile learning can be a useful add-on tool for students with special needs. However, for SMS and MMS this might be dependent on the students' specific disabilities or difficulties involved. Good IT support is needed. Mobile learning can be used as a 'hook' to re-engage disaffected youth. It is necessary to have enough devices for classroom use.

Challenges met by M-learning

Technical challenges include

Connectivity and battery life .Screen size and key size .Ability for authors to visualize mobile phones for delivery .Possibilities to meet required [[bandwidth] for nonstop/fast streaming. Number of file/assets' formats supported by a specific device .Content security or copyright issue from authoring group .Multiple standards, multiple screen sizes, multiple operating systems. Reworking existing e-Learning materials for mobile platforms.

Social and educational challenges include

Accessibility and cost barriers for end users: [Digital divide](#). How to assess learning outside the classroom .How to support learning across many contexts. Content's security (or)

pirating issues. Frequent changes in device models/technologies/functionality etc .Developing an appropriate theory of learning for the mobile age .Conceptual differences between e- and m-learning .Design of technology to support a lifetime of learning .Tracking of results and proper use of this information No restriction on learning timetable .Personal and private information and content .No demographic boundary .Disruption of students' personal and academic lives .Access to and use of the technology in developing countries.

Growth

Over the past ten years mobile learning has grown from a minor research interest to a set of significant projects in schools, workplaces, **museums**, cities and rural areas around the world. The m-Learning community is still fragmented, with different national perspectives, differences between academia and industry, and between the school, higher education and lifelong learning sectors.

Current areas of growth include:

- Testing, surveys, job aids and just-in-time (J.I.T.) learning
- Location-based and contextual learning
- Social-networked mobile learning
- Mobile educational gaming
- "Lowest common denominator" m- Learning to cellular phones using two way SMS messaging and voice-based Cell Casting (podcasting to phones with interactive assessments)

Future

Technologies currently being researched for mobile learning include:

- Location aware learning
- Point-and-shoot learning with camera phones and 2D codes
- Near Field Communications (NFC) secure transactions
- Sensors and accelerometers in mobile devices in behavioral based learning
- Mobile content creation (including user generated content)
- Games and simulation for learning on mobile devices

- Augmented reality on mobile devices

Approaches

The use of mobile learning in the military is becoming increasingly common due to low cost and high portability.

In the classroom

- Students using [handheld computers](#), [PDAs](#) or handheld voting systems (such as [clickers](#)) in a classroom or lecture room.
- Students using mobile devices in the classroom to enhance group collaboration among students and instructors using a Pocket PC.

Mobile learning can provide support that enhances training in a classroom environment.

Class management

The mobile phone (through text [SMS](#) notices) can be used especially for distance education or with students whose course requires them to be highly mobile and in particular to communicate information regarding availability of assignment results, venue changes and cancellations, etc.

Podcasting

[Podcasting](#) consists of listening to audio recordings of lectures, and can be used to review live lectures and to provide opportunities for students to rehearse oral presentations. Podcasts may also provide supplemental information to enhance traditional lectures. Psychological research suggests that university students who download podcast lectures achieve substantially higher exam results than those who attend the lecture in person, but only in cases in which students [take notes](#). Podcasts may be delivered using [syndication](#), although it should be noted that this method of delivery is not always easily adopted .

Outdoor

- Learning in museums or galleries with handheld or wearable technologies
- Learning outdoors, for example on field trips.
- Continuous learning and portable tools for military personnel.

Mobile Learning: Knowledge in the Hand

While you may initially think of mobile learning as delivering e-Learning on small form factor devices, or often referred to as eLearning “lite”, it has the potential to do much more than deliver courses, or parts of courses. We define mobile learning (commonly referred to as m-Learning) as all “knowledge in the hand.” It includes the use of mobile/handheld devices to perform any of the following:

- Deliver Education/Learning
- Foster Communications/Collaboration
- Conduct Assessments/Evaluations
- Provide Access to Performance Support/Knowledge

Conclusion

Today, any number of portable devices can quickly and easily deliver and support these functions. Cell or smart phones, multi-game devices, personal media players (PMPs), personal digital assistants (PDAs), or wireless single purpose devices can help deliver coaching and mentoring, conduct assessments and evaluations (e.g., quizzes; tests; surveys/polls; and certifications), provide on-the-job support and access to information, education and references, and deliver podcasts, update alerts, forms and checklists. In these ways, mobile learning can enhance and support more traditional learning modes, making it more portable and accessible. Mobile devices can also serve as powerful data collection tools and facilitate the capture of user created content. The future holds many experimental mobile initiatives, plus other context specific opportunities we have not yet discovered. Included today are games, simulations, sensor-driven tracking and feedback, location-based, and “point and shoot” learning. The benefits of e-learning are many and if the above motivational factors can be worked out to the last point then the job is half done. The rest of the issues will get sorted out automatically. The best part of e-learning is that it enables organizations to deliver training to people globally without bringing them to a single location. That is one of the salient points of an e-learning solution. So it is important to remember that along with the motivational factors, change from traditional classroom training to e-learning on the desktop

needs to be thoughtfully managed. E-learning is a tool, which when combined with the employee direction can build an organizations strength and take it to the zenith.

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