

Mobile Learning: It's Implication in Education and Training

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Abstract

M-learning is the follow up of E-learning which for its part originates from D-learning (Distance learning). Mobile learning simply means "learning on the move". Mobile technology extends learning beyond the walls of classroom. • Enrolment of mobile learning students into fee-paying courses. • Enrolment of mobile learning students into assessed courses. • Enrolment of mobile learning students into accredited courses. This is essential for incorporating mobile learning into the mainstream. Furthermore, books on mobile learning need to be written. Wireless and mobile technologies to enhance teaching and learning. M-learning: Mobile, Wireless, is your pocket learning.

KEYWORDS:-E-learning, M-learning, PDA's, Terminology, GPRS, Portability, Motivation.

Introduction:-

Wireless technologies are revolutionizing education. They are transforming the traditional ways of learning and teaching into 'anytime' and 'any place' education. Empirical studies have shown the advantages of using wireless technologies in learning environments, which includes supporting group work on projects. Thus they are engaging learners in learning related activities in diverse physical locations and enhancing communication and collaborative learning in the classroom.

M-Learning (Mobile Learning)

The field of education through technology is a vast one with subtle distinctions among its various branches. Distance learning incorporates all forms of instructions in which the instructor and the student are physically removed from one another by time or space from traditional correspondence courses to web-based instruction. Electronic Learning or E-learning incorporates all forms of online instruction using personal computers-learning is the follow up of E-learning which for its part originates from D-learning (Distance learning).

The term 'M-learning' has lately emerged to be associated with the use of mobile technology in education. Mobile learning simply means "learning on the move". In other words, the new term simply attempts to differentiate between learning that takes place in formal context such as a classroom. In this, the learning process takes place any time, anywhere while we are moving in our environment. According to Clark Quinn, "it is E-learning through mobile computational devices. Defined it as

any educational provision where the sole or dominant technologies are handheld or palmtop devices. Another popular definition of M-learning states it as the delivery of training by means of mobile devices such as Pocket PCs, mobile phones and palmtop computing devices, PDAs and similar handheld devices. While defining mobile-learning one confronts tension between functionality and mobility. There is a continuum from the point of view of functionality in the devices used for E-learning and M-learning. This continuum goes from desktop computers to laptop computers to PDAs or hand-helds or palmtops to smart-phones to mobile phones.

Mainly, two kinds of words are associated with mobile technology 'Portable', which means that we can carry those devices that we call mobile. Secondly, 'wireless', i.e., there are not wires in the devices. From the educational point of view, it is the mobility of devices that is interesting, i.e., we are moving when using the technology. A person just happens to be moving while conducting educational activities. It deals with 'convenience', i.e., rational time management and other such things. However, it gains some pedagogical relevance as well when we say that a person, a student or a teacher is moving because it is possible for him or her to be moving and simultaneously conducting educational activities like studying and teaching. We can consider this perspective from the point of view of higher learning concerning the relationship between higher educational institutions such as universities and the surrounding society. The walls of the institutions become permeable, where in work and leisure; university and home; the public and the private, blend amicably. We may call this relationship as a convenience relationship between university and its surroundings where people carry out their activities.

Table I: Functionality and Mobility in Mobile- Learning

Functionality		Mobility		
Computers	Laptop Computer	PDA's Handhelds Palmtops	Smart phones	Mobile Phones

E-Learning

M-Learning

Difference between E-learning and M-learning

Many authors view M-learning simply as the natural evolution of E-learning which completes a missing component of the solution, i.e., adding the wireless feature or a new stage of distance and e-learning. However, there are quite a few differences between E-learning and M-learning on various points:

Terminology:

The transition from the E-learning to the M-learning revolution is characterized by a change in terminology as it has been mentioned in Table II.

Pedagogical Differences:

Pedagogical differences between E-learning and M-learning are given in Table III.

Communication Pathways:

The mere use of terms like 'whenever I want', 'wherever I want', and 'however I want' indeed impose new requirements not only in the technological and educational frameworks, but also in the way in which all of them interact and

communicate. Table IV summarizes differences in these communication pathways

Evaluation Methods:

There are differences between E-learning and M-learning with respect to the methods of evaluation.

Connectivity:

The connectivity is one of the main differences if a mobile device is compared with the PC (the usual medium for delivering E-learning. Now-a-days, mobile devices might be connected to the Net via many technologies- WAP, GPRS, UMTS, Bluetooth, WiFi, etc.

Differences in Hardware and Software Characteristics:

Usually, the web content is designed for desktop PCs, thus unpleasant and even rarely useful for small screened devices. The memory available on a mobile device is also relatively small. Navigation on mobile device is also very hard.

Location:

The small size of the mobile device and wireless connections make them available anytime and anywhere.

Table II: Comparison between E- and M- Learning

E Learning	M-learning
Computer	Mobile
	GPRS, 03, Bluetooth
Multimedia	Objects
Interactive	Spontaneous
Hyperlinked	Connected
Collaborative	Networked
Media-rich	Lightweight
Distance Learning	Situated learning
More formal	Informal
Simulated situation	Realistic situation
Hyper learning	Constructivism, situationism, collaborative

Table III: Pedagogical differences between E and M learning

Environment (Pedagogical Changes)

More text and graphics based instructions	More voice, graphics and animation based
Lecture in Class room or in Internet labs	Learning occurring in the field or while mobile

Table IV: Differences between E-and M- learning Environments with respect to the mode of Communication between Instructor and Students

Time delayed (Student need to check e-mails or websites)	Instant delivery of e- mail or SMS
Passive communication	Instant Communication
Asynchronous	Synchronous
Scheduled	Spontaneous

Student-to-Student Communication

Face to Face	Flexible
Audio- teleconference common	Audio and Video teleconference possible
Email to Email	24/7 instantaneous
Private location	No geographic boundaries
Travel time to reach the Internet site	No travel time since wireless connectivity
Dedicated time for group meetings	Flexible timings on 24/7 basis
Poor Communication due to group consciousness	Rich communication due to one to one communication, reduced inhibitions

Feedback to Students

1 to I basis possible	1 to 1 basis possible
Asynchronous and at times delayed	Both asynchronous and synchronous
Mass/standardized instruction	Customized instruction
Benchmark based grading	Performance and improvement-based grading
Simulations and lab based experiments	Real life cases and on the site experiments.
Paper based	Less paper, less printing labour cost

Advantages of M-Learning

Mobile technology extends learning beyond the walls of classroom. It offers greater flexibility in where and when learning happens. Following are the advantages of M-learning:

Portability:

Due to their portability, these mobile devices can be carried from class to class or wherever one goes and information can be acquired while interacting one's peers. Portability can make a difference in a wide variety of settings, namely the classroom, field trips or outside of the school environment.

Collaboration:

Handheld devices allow the learner groups to distribute, aggregate and share information with ease, resulting in more successful collaboration. According to Perry, wireless technologies, notably PDAs are proving to benefit 'family learning' as learners are able to use them for various literacy tasks, noting, reading e-books and then taking them home to continue working on them along with their parents .

Motivation:

Teachers report that learners using handheld wireless technologies demonstrate an increased autonomy in learning, as the learners show increased self directedness in learning and take the initiative in finding ways to use the handheld devices for learning. Perry says that giving learners wireless technologies 'lights up' their enthusiasm.

To a disabled learner, the added value of M-learning is threefold:

- Any assistive technology benefit afforded by m-learning is more portable so the support available to the learner is available more places and more times.
- Mobile technologies are generally cheaper than PCs and laptops so more likely to be affordable.
- Mobile technologies are private and personal in use and have none of the student self image problems that may be associated with traditional assistive technologies.

Implication in Education and Training

Though, universities and schools are more commonly implementing programs and curriculums through mobile devices, some criteria is needed for the inclusion of M-learning courses in the mainstream education and training. There are four criteria for the inclusion of mobile learning into mainstream education and training. These are:

- Enrolment of mobile learning students in courses on the institution's official prospectus. This is essential for incorporating mobile learning into education and training.
- Enrolment of mobile learning students into fee- paying courses. This is applicable to countries in which fees are payable for enrolment in further and higher education courses. This is essential for incorporating mobile learning into education and training.
- Enrolment of mobile learning students into assessed courses. If the mobile learning course is not assessed with the same rigor and procedures as other courses offered by the institution, it can not be considered as a part of mainstream education and training
- Enrolment of mobile learning students into accredited courses. This is essential for incorporating mobile learning into the mainstream. Like distance education and E-learning, the achievement of accreditation for mobile learning is an indication that the sector has entered into the mainstream

Implication in the Classroom

Teenagers of the current generation are immersed in cyber culture and are mobile and wirelessly connected. For many years now, teachers have been trying to eradicate mobile phones from the classroom environment, fearing that they were interrupting and distracting students from learning. However, more recently, it has been seen that the mobile devices such as mobile phones become integrated educational tools for both teachers and learners and they are quickly invading many classrooms. The effectiveness of mobile devices to be an educational tool is great due to their ability for two-way interaction, which is what learning should be about. PDAs with wireless capabilities are also becoming a common tool in the classroom environment.

Students may use their mobile devices as keyboard voting devices to respond to the instructor's questions, informal grouping and sharing among students and to look up terms which they may not understand. This type of use of mobile devices in lessons in the classroom can also be collaborated simultaneously with learning 'out of the classroom'. This may be that one group of students go outdoors and take images with their mobile phones which they send back to a group in the class who can look up and research around the subject of the images.

Out of the Classroom

Out of the classroom activities enable students to learn in their own time and place. The most common function of mobile wireless networks in this environment is the ability to access class resources. This may mean access to notes on the lesson, or streaming video and audio of it. It allows for interactive forums and discussions in a relaxed environment and a wide variety of tests. It extends the classroom and its activities beyond the border's of its walls and enables the student to make the world a learning place.-

Use of SMS

One of the most straightforward applications of the usage of mobile devices as educational supporting tool is messaging. An SMS system is considered to be useful to spread information about lectures and classes, corrections in the schedule, etc. In certain cases, students find it more convenient than email or www as information comes always on time through SMS.

Conclusion

Ubiquity of mobile devices in the class-room has allowed for M-learning to take place within the classroom environment. These devices are now encouraging students to participate in face to face lessons with their mobile devices. Like the fields of distance education and e-learning before it, mobile learning needs to achieve acceptance and then status and then certification, eventually at university degree level. Universities and colleges need to be convinced to accept M-learning as their normal means of communication with all their students on changes of timetable, submission deadlines, enrolment procedures and other administrative necessities. The course modules for PDAs, hand-fields, palmtops, smart-phones and eventually for mobile phones should be developed. Furthermore, books on mobile learning need to be written. On technological side, wireless Internet is a must for M-learning to take off. To cater for huge chunks of data that is common in most educational web-sites, there is a need for high-speed wireless data transfer. But, this should be at affordable costs to the general public.

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