

M-Learning Paradigm Based On Clouds: A Review

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Abstract: Mobile learning is a new emerging and powerful learning paradigm which facilitate the learning process with the use of portable devices in the form of e-content. E-content means digital learning material. Portable devices are very helpful in distributing information to wide variety of students who are disperse in many locations. Now in present scenario there is tremendous advancement in technology emerged in the sense of user–interface, wi-fi, blue tooth, wireless lan and globally adopted technology such as 4g\3g that creates a new paradigm to access the information in disperse one is mobile. This mechanism by which any one can access information while with mobility in disperse location is referred as m-learning. The present study gives recent developments in the area of m-learning based schemes and their comparative analysis with e-learning. We have taken various m-learning schemes as sample for efficiency comparisons and provide comparison results based on various operation used in respective schemes. This paper identified various m-learning requirements which are must require in m-learning schemes. M-learning schemes can be applied for online education, e-learning, m-learning etc. For learner.

Keywords-M-Learning, Learning, E-Learning, Mobile Learning.

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I. Introduction

In present scenario a powerful mobile which are referred as smart phone with strong technology and wide variety of services can be deployed in accessing information at any-where and at any-time. These two important aspects of mobile phones give a new platform which shifted the learning paradigm from e-learning to m-learning. Also it is a self-directed and self-motivating learning process. Mobile learning has its emergence of e-learning. Author [1-2] defined it as any sort of learning procedure where the dominant technology is only the portable device. The another way to define mobile learning is when the learners are disperse in many location, learners are of any age group can have right to access the information and can be benefitted by the learning opportunities offered by the powerful mobile technology.

In present scenario to make information available easily to increasing mobile population at any place and anywhere [3]. A mobile with a variety of services can provide a better platform for educational purpose. Also it provides the mobile learner a strategic advancement in using the learning material [4]. Mobile learning have several benefit over the other learning paradigm. Mobile learning provides innovative, persistent, easy to use and easy to adopt learning paradigm [5]. It is self- adoptable, self-engagement and self-evaluating learning process [6,7]. It is a learner oriented learning process that now days gaining popularity over other learning process [8]. It is as elf-motivating learning activity that is supported by on- line lectures, assignment, self-evaluation process with the help of sound, videos, text and images [5]. M-learning covers several issues in a learning process. These issues are related feasibility, training cost, background of students9 the opportunities of personalization given to learner [10], management of learning material [11,12], evaluation of learning material [13], design of learning [14,15] that gives the m-learning module advancement over other learning modules. These advantaged can be find in the work of [16,17,18,19,20].

The ideal of always-connective and always available for all is the key success factor for m-learning. M-learning provides a better learning environment for learner [21,22]. The main factors for the success of m-learning is that it facilitate its learner in great interactive and responsive way. There are many factors that suggest that mobile technology can bring a remarkable revolution in the field of education [23]. As it gives 24*7 infrastructure [24,25] and self-directed study option and self- assessment choice to its learner. Also it gives mobility to learning by which learner can access the information regardless of its location. M-learning offers its student more effective and efficient learning process [23].it also motivates its student for more information seeking [24] which gives a better outcome of learning process [23].the main advantage of m-learning is that the learner can engage in learning process within the classroom and also outside the class in a location free manner21 and they can have better understanding of learning material. M-learning offers ‘self-regulated’ learning model [26] and the learner can identify its own way of learning within the environment that is best suited to them [27,28]. Now days distance education evolve rapidly and accepted globally. This gives a rapid growth in on line education [29];which widely utilize the information and communication technology (ict)

which support both the teacher and learner [30]; also m-learning covers many aspect like the new emerging learning paradigm [30]; the diverse location of students [31]; part time education, mature age of student who have working background and want to upgrade their qualification of higher education [32,33].m-learning is a long term or we can say that it is truly learner oriented learning process [34] which includes:

- Self-directed: as it is always connective and available it motivates and encourages its students to engage in learning process.
- Easily adoptable: as now days smart phones are easily approachable to everyone it can be easily adoptable regardless of age group and location.
- Interactive: the learner can engage in interactive and live learning process.
- Portable: smart phones are smaller in size as compare to other electronic devices so can easily carried to any location.
- Connectivity: now days the powerful 3g\4g technology over wireless network can be easily deployed for accessing information regardless of location (mobile learning network) [35].

Other advantage of m-learning that it provides a stronger communication between the teacher and learner as it enables face to face communication between them and increases their computation skills [36,37,38]. It also help to build a strong learning community by combining various teachers and learners which help in constant knowledge sharing in interactive way [39,40]. Author [41] discovered that m-learning devices have better computation power that enables learner to access their learning material at any time [42] also discovered that handheld devices not only improve computation power of mathematical application but they can help in providing student more relevant and accurate experimental learning. In present scenario m-learning is widely accepted throughout the globe. Now advancement in technology, availability of network, powerful portable devices, wide variety of services, proper management of content, high speed processing power [43] strongly suggest that mobile devices can be an effective tool that can be deployed for educational purpose. Author[44] defines e learning as learning process which is carried out at any electronic tool and media and in this sense mobile learning can be defined as learning process which is carried out with the help of portable device in conjunction with mobile phones.

Comparative Study Between E-Learning And M-Learning

E-learning can be defined as delivery of learning material to learner through internet via any electronic device while m-learning can be defined as delivery of learning material to its learner through any electronic device when the learner is not confined to any fix position or we can say that the learner is mobile. A comparative study is performed between both of these two teaching pedagogy on some issues which strongly favors the benefits of m-learning over e- learning and suggest paradigm shift in teaching pedagogy. These issues are as following-

- Location: while e-learning is class oriented learning that can be conducted only in class rooms in a fix interval of time m- learning can be carried out at anywhere and anytime.
- Pedagogical change: m- learning has more voice, graphics, and animation based instructions in comparison to e-learning. Moreover a learner have to constantly check his mails when one has missed his previous learning material while in m-learning there is constant delivery of study material through sms when one has missed their previous study material.
- Communication: while e-learning have asynchronous communication between the instructor and teacher, in m-learning there is synchronous communication between them which creates a flexible learning environment and learning becomes interactive. In e-learning the lecture timing is already scheduled in m-learning there is spontaneous lecture timing.
- Language: usually in e-learning there is only one language is deployed while in m-learning there is automatic translation for delivery of instruction in many languages is possible.
- Assignments: in e-learning assignments given are usually in-class or computers while in m-learning assignments can be performed in any location. For performing assignments in e-learning a dedicated time interval is needed while in m- learning for performing assignments it is 24*7 and instantaneous. So for performing assignments in e-learning there is a restricted amount of time while in m-learning any amount of time is possible.
- Feedback usually in e-learning there is delayed feedback but in m-learning feedback is interactive and instant which help in quick solution of problem.
- Exams and presentation: in e-learning exams and presentation are confined to only one language while in m-learning automatic translation of instruction in many languages is possible. In e-learning presentation is mostly individualized while in m-learning we can form collaborative work group for presentation. In m-

learning exams can be conducted at anywhere and at any time while in m- learning it is confined to fix position.

Challenges for m-learning

M-learning can bring a revolution in the field of learning but there are some challenges in implementing m-learning these challenges are as follows:

- Connectivity : m-learning mainly focuses to the mass where there is need to deliver information who do not have much resources to gain the information or we can say that people who are living in urban localities and using smart phones but unfortunately the network connectivity is very poor in these locations.
- Cost: data cost should be minimized so that people can utilize full potential of this new emerging learning paradigm i.e m-learning.
- Screen size and key size of portable devices should be appropriate so that it becomes easy to use them while accessing the information.
- Bandwidth requirement should be in range for non-stop and fast streaming.
- The data format should be supported by the portable device.
- Memory management for the portable device.
- Risk of sudden break down of the information delivering channel should be minimized.
- Content security is the measure issue for m-learning so special provision is taken into account to secure the mobile data.
- Re-engineering of existing e- data so that it can be utilized for mobile platform.

Mobile technology is very helpful in providing education to diverse group of students with the most advance technology. This advancement in technology are strongly favoring that m-learning can provide a strong platform in distributing the relevant information to needy mass in an effective and efficient way.

II. Conclusion

In present trend m-learning is now grown day to day and extension of the e-learning. In the coming future, it's expected that learning will move beyond the classroom and always-on learning, accessible to the masses⁶. In other words it's truly learner centered learning. This includes:

- Portability which means mobile devices can be carried everywhere and help learning at the anywhere and anytime.
- Connectivity provides the learners connect other people, devices or network.
- Mobile devices are the tool which helps a cooperative learning environment.

Mobile learning is 24*7 learning process. It is effective and efficient way of learning to the learner. It is also location free learning process from where the learner can learn anywhere from where the learner found meaningful and relevant. It is also a self-regulated learning as learner identifies his or her own optimal way of learning. Sms and mms services can also increase the interactivity between the learner and instructor using mobile device.

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