

# Mobile Learning on School Teaching and Learning

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## ABSTRACT

**In this survey we discuss M-Learning as one significant issue in the learning process and teaching methodology by making the learning process achievable, flexible and individualized. Mobility, Operation, Accessibility, Knowledge, Information, Collaboration and Interacting with portable technology are benefits of M-learning to both students and the educators. Generally, mobile technology decreases the limitation of learning locations with the mobility of general portable devices, and provides unique opportunities for educators to deliver educational materials more efficiently.**

**Additionally, Electronic-Learning (E-Learning) is content designed to provide the student the ability to assimilate learning anywhere, and at any time. Unlike depending on a desktop that needs a fixed location and a source of power.**

**This technology has grown around the world in many areas, from a minor research interest to a set of remarkable projects in schools, higher education, workplaces etc. These areas are: Mobile educational gaming, Deliver M-Learning to cellular phones using two way SMS messaging and voice-based Cell Casting (podcasting to phones with interactive assessments), Testing, surveys, job aids and just-in-time (J.I.T.) learning, Social-networked mobile learning, Location-based and contextual learning. We get that there are a lot of probabilities for formal and casual learning regardless of the place.**

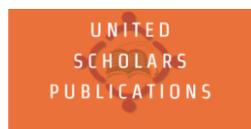
**Keywords:** M-Learning, E-Learning, Social-networked M-learning, and Game-based learning

## INTRODUCTION

The growth of the Internet has generated new techniques for instructors to connect with students. Numerous higher education organizations have applied the use of virtual education environments and combine E-learning as a new contrivance for learning. Paralleled with superannuated style lectures, E-learning has the expansion of tolerating students to decide on when, where, and how they get education. Moreover it allows students to examination material and gain feedback [1]. Mobile learning (M-learning) receives these benefits from E-learning, but encompasses their reach by creating use of portable wireless skills. Recent learners have a growing load on their time, and they are frequently required to study in their desired time.

Stone (2004) outlines M-learning as a 'special category of E-learning, limited by a number of individual properties and the potency of devices, bandwidth, and other characteristics of the network being applied' [2]. Milrad (2003) states E-learning as 'learning propped by digital electronic equipment and media', and M-learning as 'E-learning using mobile devices and wireless broadcast' [3].

This study summarizes some investigation about M-Learning as well as relevant literature and it begins by explaining about the M-Learning concept, benefits and values, and it continues with the effects of learning and teaching; furthermore, we will discuss the Game-based learning, opportunities and challenges of mobile learning among Higher Learning Students (HLS) in developing countries of Zanzibar context and K-12 Teachers and the impact of engaging students and improving outcomes. As result, the fate of M-learning depends to a great extent on the level of social acknowledgement it gets. Offering these modules will give additional proof of the legitimacy of portable adapting as an appealing supplier of income streams to mobile administrators.



## METHODOLOGY

To advance mobile technology usage in education, some interviews were made with experts by UNESCO that were about the overview of current and future of M-Learning, and how it achieves to advance education for all goals.

### I. The Current State of Mobile Learning

At present, there may be no standard definition for M-Learning. This nonattendance connects back to the debate of where M-Learning belongs. Some see it only as a subset of E-Learning, while others believe M-Learning is an independent discipline. Other groups see M-Learning as a lateral move in the distance-learning world [4] [5]. By the way, focuses of all these summarized articles are on M-Learning similarly as an outgrowth of E-Learning, modified to change the smaller screens of the devices, but complex enough in its own right to justify tentatively its consideration as a separate discipline [5].

The term M-Learning or "Mobile Learning", has distinctive implications for diverse groups, that allude to a subset of E-Learning, instructive engineering and separation instruction, that concentrates on adapting crosswise over settings and learning with mobile phones. Mobile Learning has numerous diverse definitions. One meaning of Mobile Learning is, "any kind of discovering that happens when the learner is not at an altered, foreordained area, or discovering that happens when the learner exploits the learning open doors offered by mobile advances".

E-Learning now characterizes any scattering of instructive learning over the Internet. This makes E-Learning a subset of innovation based preparing. Interestingly, Mobile Learning is regularly self-paced, un-fastened and casual in its presentation.

Six categories can be defined as a useful trend in M-Learning such as [5]:

1. Technology-driven mobile learning
2. Miniature but portable E-Learning
3. Connected classroom learning
4. Mobile training and performance support
5. Informal, personalized, situated mobile learning

### 6. Remote/rural and development mobile learning

Moreover, it can be mentioned of some courses, which are available in M-Learning. Those are: telecommunication courses, Courses in business and marketing, MBA courses that are used for summaries, examination preparations, additional information and focused studies [4] and for students in medical school [6] who require specialized information and updates.

#### a) Virtual Learning Environment

Virtual Learning Environment (VLE) is one of the courses which are available in M-Learning. For instance, at Gipps land Medical School (GMS), the educational impact of the M-Learning program is evaluated by the students' perspectives in 2010. This survey was done by questionnaires and individual interviews from the GMS students' experiences of M-Learning [6].

In this respect, all understudies were given the same smart phone in order to guarantee that all understudies had fair access to assets; on the grounds that the issues are accounted for by understudies were the web search tool (Firefox), short battery life and excessively few force attachments in showing spaces and deficient memory (RAM and/or hard drive limit) to spare work. Understudies reported numerous instructive profits from the school's purchasing of laptops about having the capacity to get to notes, address slides and readings preceding addresses and to sound taped addresses.

The result of this examination defined that the virtual learning environment upheld to adapting by speedy and simple access to electronic instructive assets at whatever point understudies obliged them. Likewise, a few ranges of the ML project need further improvement, including the configuration of physical framework of the restorative school, and upgrades to the VLE.

#### b) Learning Management System

M-Learning must be incorporated in a Learning Management Framework (LMS) and be accessible to all understudies in order to be successful. Research in the region of E-Learning, has brought up that Learning Management Frameworks (LMS) are the most regularly utilized answers for sorting out E-Learning courses. For this reason, some exploration was directed at the Faculty of Organizational Sciences, University of Belgrade in 2014 [7]. This assessment is carried out to focus around bringing versatile management and innovations into the E-Learning framework, to talks about the issue of

utilizing and conveying instructive substance from the Moodle learning management framework to cell phones. Subsequently, this study looks at the variables affecting understudy gains from portable conveyance of tests coordinated with the Moodle environment by means of desktop stage. The results propose that the portable and desktop tests can be similarly utilized as a part of the learning procedure and that the application of cell phones has a positive impact on the understudies' information. Moreover, the poll review demonstrated that the understudies were fulfilled by the application interface [7].

## II. Benefits of Mobile Learning

The advantages and disadvantages associated with M-Learning are:

The cost of M-Learning can be a double-edged sword. It has the potential to reduce overall education or training costs by restricting or eliminating the need for traditional classroom learning, printed materials, lost production time, and the presence of an on-site trainer. This must be weighed against the cost of the initial investment, time spent reformatting the instruction, the possible necessity for multiple formats, and the period set aside for testing.

The benefits of M-Learning are as follows:

- Relatively economical open doors
- Multimedia content conveyance and creation choices
- Continuous and arranged learning backing
- Decrease in preparing expenses
- Improving levels of reading

## III. Challenges in Mobile Learning

In this study two challenge designs are proposed; the first one concerns the grouping criteria, which has also been claimed to have impact on mobile collaborative learning. The second one is the unobtrusive recording technique of social interaction, which may be referred back to wearable computing, whose application is to automatically record and analyze face-to-face conversational interaction.

The result of this design shows that Mobile technology can be utilized to help students actively interweave their experience in both social and informational realms to support their learning. The study provides one unique aspect of design for instructors to replicate these innovative mobile practices into their subject domains [8].

In fact, teachers now face unique challenges and opportunities in adjusting their teaching method in such a rapid changing time. Both quantitative and qualitative feedback helped us observe the occurrence of a positive shift in participating teachers attitudes and also students attitudes towards mobile learning during the research period.

There is a pilot survey study in mobile learning for teachers in the United States; with the aim to determine changes in participant's knowledge, behavior, and attitude before and after an intervention. In this survey ten teachers completed four research tasks that facilitated them in gaining knowledge about mobile devices and mobile applications. The research period spanned from late March to early June 2011, and the ten participants were asked to do the following four research tasks during the period:

(a) Review a self-paced versatile learning website, which presents 75 portable applications in the ranges of Math and Science. These applications were chosen by the educational technology graduate understudies at the UHM,

(b) Attend a half-day portable innovation workshop on April 30, where the exploration group and the instructors talked about the utilization of iPhones, iPods, and iPads in showing and learning practices,

(c) Choose no less than three portable applications from the asset site and compose assessment of the applications,

(d) Finish the online study [9].

The results clearly indicated that it was worth investing time and incentive into professional development, even when it was only a short introduction, and a few months devoted to personal exploration, punctuated by a small incentive, as in this pilot study [9].

On the other hand, in the current era of advanced technology, mobile learning represents exciting new frontiers in education. It becomes feasible and offers new benefits to students. In this case, using mobile phones as a learning tool, is investigated among Higher Learning Students (HLS).

The study builds on the encounters of understudies from three higher learning organizations in Zanzibar, which were thought to be illustrative of other learning foundations in the developing world, especially in African countries which have comparative learning

situations. Information was gathered through detailed analyses and surveys in order to get the understudies' perspective focusing on their experience of portable learning [10].

At long last, the study observed that there are numerous open doors for understudies to embrace portable learning and that it urges them to act naturally roused and builds their engagement with learning conduct. Then again, high cost of cell phones and poor data transmission inside the higher learning foundations are among the said difficulties [10]. Also, to motivate students more, mobile game-based learning is proposed [11].

Game-based learning can encourage students to participate in learning while playing, and make the learning process more interesting. It has a positive effect on cognitive development.

This study further discusses whether mobile phone game-based learning can replace computer game-based learning. The learning motivation of the students using mobile phone games for learning is compared to those who use computer games for learning. In the experiment, the section of "CPU Scheduling" in the operating system course was selected as game teaching contents [11].

Therefore, we find that the specialized challenges of M-Learning will be network, battery life, screen size, key size, worldwide IT help, proceeding with development of expansive band remote systems, low determination of showcases, differences of working framework and so on.

#### IV. The future of M-Learning

In 2006, there were no versatile learning stages accessible; now there are handfuls. Because of the acknowledgement by the health awareness and instruction commercial ventures what's more a few corporate elements, request has become and major instructive distributors have supplied substance. In extensive part, this has been energized by those that Everett Rogers calls "early adopters". Early adopters impact the "early majority". In turn, the "early majority" impacts the "late majority". Once this gamut is situated in movement, what starts as an oddity turns into a helpful extra to the society, then a staple of it, and at last vital to it.

The craving to utilize future versatile advances as a part of the classroom is stronger among African, American and Hispanic understudies. Young ladies in optional schools (i.e., center and secondary school) are more inspired by utilizing cell phones to do their school work than young men in auxiliary school (33% versus 26%).

By differentiation, the yearning to utilize tablets for one year from today's schoolwork, does not demonstrate

huge contrasts by sex. A greater part of both young men and young ladies need to utilize the huge 10" tablet to do their schoolwork. Be that as it may, young men are more probable than young ladies to need to utilize the vast tablet (57% versus 51%). African, American and Hispanic understudies seem significantly more inspired by growing their utilization of portable advances than White understudies. For the 2015 school year, African, American and Hispanic understudies were more intrigued than White understudies in utilizing:

- A tablet (51% vs. 51% vs. 41%)
- A smartphone (33% vs. 39% vs. 24%)
- A hybrid (41% vs. 36% vs. 29%)

The quick future for M-Learning emerges from its stature as an acknowledged segment in a mixed environment as exemplified by ACU and Capital One. Getting to adapt through a mixed bag of decisions permits the learner the flexibility to learn in the most friendly of environments for his or her purposes. With advanced locals and outsiders getting to be more acclimated to existence with a handheld gadget, M-Learning gives a consistent stage on which to build a handy arrangement of guideline.

As teachers get to be more capable at planning courses for access on a cell phone, the pedagogical and also analogical approaches will likewise advance to suit the medium. Producers have made accessible fittings and programming to conquer the inborn impediments of cell phones, for example, their little screen size what's more nonattendance of a conventional console. In 2010, a few of the real cell phone manufacturers created cell phones with a projector built-in.

The projector takes the picture or presentation stacked onto the telephone and broadens it for a fresh, clear view. For the individuals who are not able to move up to one of these models, MicroVision, 3M, and a couple of different organizations have created a pocket-sized, battery-worked, smaller than expected projector which plugs into the A/V yield port. MicroVision's PicoP permits clients to view presentations, offer pictures, and also watch features on any surface that allows a projectable picture [11].

This configuration permits the creation of M-adapting in which a little screen is no more than a component [12]. Apple's iPad, which in size is halfway between a cell phone and a portable computer, has a utilitarian virtual console, hence sparing space on the gadget [13]. For

those students who don't have an iPad, ThinkGeek offers a Bluetooth Laser Virtual Console. Associating with a PDA or a cell phone, this conservative gadget ventures a fullsize working console on any level surface [14] [15].

## RESULTS AND DISCUSSION

Mobile learning gives expanded choices to the personalization of learning. With access to so much substance at any given time and place, there are a lot of possibilities for formal and casual learning, both inside and outside the classroom. At the same time, the future of mobile learning depends to a great extent on the level of the social acknowledgement it gets. Then again, users in developing countries have the same requirements for M-Learning, and that is to be portable, open and moderate, as those in developed countries do.

## CONCLUSION

In conclusion, there are numerous students in bad situations connecting to the web, or experiencing trouble in managing engineering that empowers adapting in an E-Learning environment. The reason behind the disappointment of portable learning is that M-Learning is not considered by the information transfer administrators to be a substantial and alluring income stream. Progress is generally made in a broad variety of portable applications, yet training and preparation linger behind. A concluding level of the technique for the consolidation of mobile adapting in standard instruction and preparing is spoken to by the advancement and offering to understudies of full modules by portable learning. With the landing of 3G innovations feasible course modules can be created.

## REFERENCES

- [1] Evans, C., & Fan, J. "Lifelong Learning through the Virtual University", *Journal of Campus Wide Information Systems*, 19(4), pp. 127–134. 2002.
- [2] Stone, A., "Designing Scalable, and Effective Mobile Learning for Multiple Technologies", *learning with mobile devices*, London: Learning and Skills development Agency. 2004.
- [3] Milrad, L., "Mobile learning: challenges, perspectives, and reality", *Mobile learning: essays on philosophy, psychology and education*, pp. 151–164, 2003.

- [4] Singh, Mandeep, "M-Learning: A New Approach to Learn Better", *International Journal of Education and Allied Sciences*, 2 (2), pp.65–72, 2010
- [5] Crescente, Mary Louise, Lee, Doris, "Critical issues of M-Learning: design models, adoption processes, and future trends", *Journal of the Chinese Institute of Industrial Engineers*, 28 (2), pp.111–123, 2011.
- [6] Nestel, D., Ng, A., Gray, K., Hill, R., Villanueva, E., Kotsanas, G & Browne, C., "Evaluation of mobile learning: Students' experiences in a new rural-based medical school", *BMC medical education*, 10(1), pp. 57, 2010.
- [7] Bogdanović, Z., Barać, D., Jovanić, B., Popović, S., & Radenković, B., "Evaluation of mobile assessment in a learning management system", *British Journal of Educational Technology*, 45(2), pp. 231-244, 2014.
- [8] Yu-liang ting ,Yaming tai," a new social aspect in collaborative mobile learning: design challenges and learning effects", *IEEE conference*, pp.29-30, 2013.
- [9] Meng-fen lin ; Fulford, c.p. ; Ho, c.p. ; iyoda, r. ; ackerman, l.k.," Possibilities and Challenges in Mobile Learning for k-12 Teachers: a pilot Retrospective Survey Study", *IEEE conference*, pp.132-136, 2012 .
- [10] Haji, h.a. ; shaame, a.a. ; kombo, o.h., " The Opportunities and Challenges in Using Mobile Phones as Learning Tools for Higher Learning Students in the Developing Countries: Zanzibar Context", *IEEE conference*, pp.1-5. 2013.
- [11] Wei-ching Lin ; jui-yu Ho ; Chien-hung Lai ; Bin-shyan jong," Mobile Game Based Learning to Inspire Students Learning Motivation", *IEEE conference*, pp.810-813, 2014.
- [12] West, Darrell M., "Mobile Learning: Transforming Education, Engaging Students, and Improving Outcomes", *Brookings Policy Report*, 2013.
- [13] Yousef Mehdipour ,Hamideh Zerehkafi, "Mobile Learning for Education: Benefits and Challenges", *International Journal of Computational Engineering Research*, vol. 03, Issue 6.
- [14] Martin, Florence, and Jeffrey Ertzberger, "Here and Now Mobile Learning: An Experimental Study on the Use of Mobile Technology", *Journal of Computers & Education*, pp.76-85, 2013.
- [15] Min Liua, Robert Scordinoa, Renata Geurtza, Cesar Navarrete, Yujung Koa & Mihyun Lima, "A Look at Research on Mobile Learning in K–12 Education from 2007 to the Present". *Journal of Research on Technology in Education*, volume 46, Issue 4, 2014.