

Survey Paper: M-Learning A new form for Distance Learning

Walaa Abdel Wahab Mekki
 Faculty of CS & IT, Sudan University, Sudan

Yousif Elshafie Hashim
 Deanship of PYP, AL Jouf University, KSA

Abstract- Mobile learning is not the conjunction of mobile and learning it has always implicitly meant mobile electronic learning and its development have to be understood as both a continuation of conventional electronic-learning and a reaction to this conventional and limitations. E-learning and M-learning have become extremely important words of the educational technological revolution. E-learning is a subset of distance learning and m-learning is a subset of e-learning. M-learning is an amazing educational tool for teaching and learning process it is the new sensation in the field of education because it offers modern ways to support learning process through mobile devices. Mobile phones can be used in various ways to enhance learning because of their cost and availability of apps, so they play an important role in our day lives in various purposes. M-learning is one form of learning processes, possessing similarities and differences with e-learning, it is mainly based on the concept of wire/wireless communication technologies, as the individual learner can access the learning material, lectures and seminars whenever they desire and wherever they are, whether inside the classroom or outside it which creates a new learning environment in the context of the different learning settings.

Keywords: E-learning, M-learning, distance learning, teacher education, informal learning.

INTRODUCTION:

E-learning offers opportunities for developing nations to enhance their educational development. It plays a critical role in preparing a new generation of teachers, as well as upgrading the skills of the existing teaching force to use 21st century tools for learning so it is the changing trend in education. E-learning comprises all forms of electronically supported learning and teaching. The internet made education no longer limited to the four walls of the class room. The information and communication systems, whether networked or not serve as specific media to implement the learning process. Mobile learning combines E-learning and mobile computing. Mobile learning is sometimes considered merely an extension of E-learning, but quality M-learning can only be delivered with an awareness of the special limitations and benefits of mobile devices. M-learning is a powerful method for engaging learners on their own terms. E-learning and M-learning diagrammatically mentioned, as shown in Table 1 below.

TABLE 1: FUNCTIONALITY AND MOBILITY IN A DEFINITION OF MOBILE LEARNING)

FUNCTIONALITY		MOBILITY		
COMPUTER	LAPTOP COMPUTERS	PDA'S HANDHELDS PALMTOP	SMART PHONES	MOBILE PHONE
E- LEARNING		M-LEARNING		

Though there are some differences lies between e-learning and m-learning, they are closely related. M-learning is a subset of e-learning. Their relationships are diagrammatically given below as in Fig.1&2

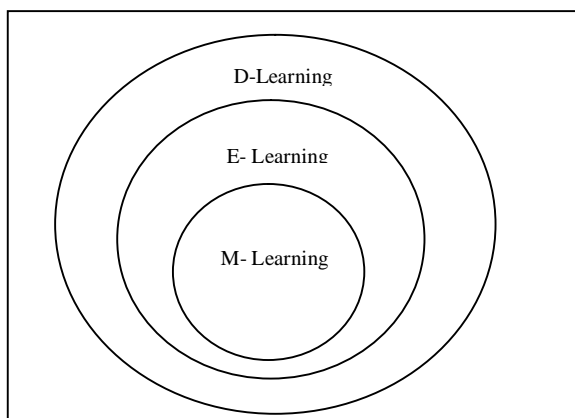


Fig 1: Perspective of learning paradigms (Georgiev et al., 2004)

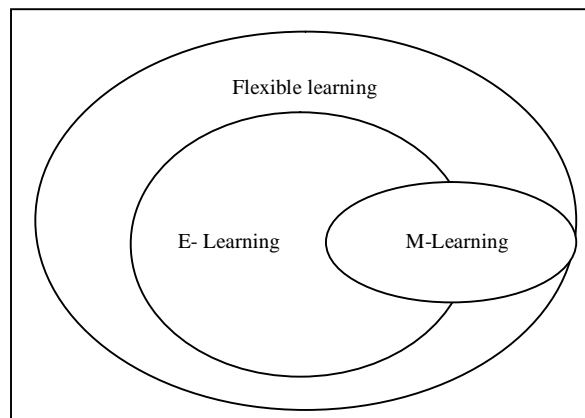


Fig 2: Relationship of E & M-learning (Flexible Learning (Low et al, 2006)

Mobile learning considered a new form of distance learning which is based on the separation of the teacher for students in time and space, which historically began more than a hundred years and take the form of paper correspondence, then appeared electronic learning where provided distance education in new ways rely on computers and computer networks technologies, wireless and mobile networking technology can provide important learning opportunities for individuals who are not available in their areas of infrastructure necessary to achieve the e-learning opportunities, such as rural areas or members of the mobile always because of their work style and who are interested in learning.

LITERATURE REVIEW:

The current study of this paper emerges from the fact it attempts to identify the uses of advanced technologies in the educational field, such as the use of telecommunication tools, especially mobile technologies in a new form of education termed mobile or portable learning. mobile learning is one form of distant learning and an extension of e-learning applications which has invaded the world with the use audio, visual, cognitive, cooperative and interactive means via the use of smart and digital electronic devices in an attempt to create a direct, dynamic, ongoing learning environment, an environment that is not constrained by spatial and temporal boundaries, leading to the elimination of traditional classrooms, routines and imitation. Such form of learning enables the individual learner to move freely in the learning material, able at the same time to access to knowledge sources whenever the learner desires [1].

E-learning or e-electronic learning also called online learning is a general term used to refer to computer-enhanced or technology enhanced learning it is an approach to facilitate and enhance learning based on both computer and communication Technology. It is used to support distance learning through the use of WANS (Wide Area Net Workers), and may also be considered to be a form of flexible learning where learning is possible in no time. It may include the use of web-based teaching materials and hypermedia in general, multimedia CD-ROMs, websites, discussion boards, collaborative software, e-mail, blogs, wikis, test chat, computer aided assessment, educational animation, simulations, games, learning management software, electronic voting systems and more, with possibly a combination of different methods being used [2].

E-learning is developed to apply information technology skills to education getting connected to the internet or any network is essential for e-learning. E-learning is naturally suited to distance learning and flexible learning, but can also be used in conjunction with face to face teaching, in which case the term blended learning is commonly used. E-learning is a means of education that incorporates self-motivation, communication, efficiency, and technology. It is a flexible term used to describing a means of teaching through technology [2].

Today the mobile technology can be used in everyday life and more suitable to implement within any countries because the mobile has mobility features, the increase of using mobile devices among people with different levels leads us to ideating how this device can be used to improve and develop activities it can be used as new tool or method to increase interaction between government and citizens. Information and communication technology (ICT) have become a critical asset for many governments in many countries, because everything in the life depends on it. [3] Mobiles are an amazing educational tool for teaching and learning process. M-learning is the new sensation in the field of education. It is creating a new wave of educational development for sustainable and viable learning option. It is based on the convergence of mobile technologies and wireless infrastructure [4]. Mobile learning offers modern ways to support learning process through mobile devices, such as handheld and tablet computers, MP3 players, smart phones and mobile phones and notebooks, mobile Tablets, iPod touch, and iPads are very popular devices for mobile learning because of their cost and availability of apps.

The main purpose of this paper is to describe the current state of mobile learning, benefits, challenges, and its barriers to support teaching and learning [5]. Traditional classroom learning is founded as a stable context by setting up a fixed location with common resources, a single teacher, and an agreed upon curriculum. Mobile learning removes all these things and enhances the interrelated aspects of mobility it helps students to expand learning space for formal learning taken in the classroom to informal learning taken where ever they prefer it also means providing knowledge from portable tools and resources available in a handy device [6].

TABLE 2. AN ANALYSIS - CONTRIBUTIONS AND LIMITATIONS - OF STUDIES ON MOBILE LEARNING

YEARS/TITLE OF PAPER	TYPE	METHOD	DATA SOURCE	CONTRIBUTION	STRONG
2010/defining mobile learning in the higher education landscape	Survey	descriptive	journals, observations, field notes	the article seeks to provide a comprehensive definition of mobile learning and from its key components and arrange them under three different concepts mobility of technology, mobility of learners and mobility of learning	this special issue also help to clarify what is meant by mobile learning by applying its key concepts to learning experiences in post-school education
2011/ mobile learning technology a new step in e-learning	Implementation	Case description	observations, survey	The study concluded characteristics of mobile learning technology, its nature, context and benefits are presented , thus be able to address the different needs of students' populations and to keep abreast with the modern Communities we all live in nowadays.	The study concluded with the need to reconsider the inputs of the teaching process and the methods used in it to develop a cognitive system, in which the characteristics of mobile learning technology, its nature, context and benefits are presented.
2011/mobile learning in saudi arabia - prospects and challenges	Survey	Case study	Questionnaire	This paper reviews the prospects and technological challenges of m-learning in SA as well as tries to measure the students' attitudes and perceptions towards the effectiveness of m-learning	This paper tries to measure the students' attitudes and perceptions towards the effectiveness of m-learning, reviews the prospects and technological challenges of m-learning in SA.
2012/mobile learning (m-learning) and educational environments	Survey	Qualitative descriptive research	Written materials, artifacts, discussions	The paper has discussed the background of M-Learning and how it can be used to enhance the whole learning system, also provides highlights of the benefits and future challenges of M-Learning in our educational environments	The paper presents literature about mobile learning and presents the M-learning approach as the next generation of eLearning
2012/a survey on m-learning	Survey	Survey	survey	In this paper, survey on m-learning to make the people to know the existing place of m-learning in the present scenario, the role of different networking technologies used for m-learning	This study makes the people to know the existing place of m-learning in the present scenario and provides an existing survey on developing M-learning. Management and the communication of mobiles in ad hoc networks (MANETs)
2013/designing the content of m-government framework	Implementation	Design-based research	Fieldwork journals, observation	This paper proposes a new framework shows the different issues that an m-government development and deployment policy must address , respect of four contexts, highlights the main guidelines that help improving Mobile -government content	proposes a new framework for adapting the content of M-government services by delivering personalized service content to the appropriate user efficiently and effectively
2013/m-learning: a new learning paradigm	Implementation	Case description	--	present the main concept of M-learning, Characteristics, ..., Advantages and Disadvantages of M-learning	Propose mobile learning anew learning paradigm, as making educational experiences more meaningful, encourages flexibility; students do not need to be a specific age, gender, or member of a specific group or geography, to participate in learning opportunities
2013/mobile learning for education benefits and challenges	Survey	Qualitative descriptive research	Written materials, Journals ,cell phone attitude survey	The aim of this paper is to show the current state of mobile learning, benefits, challenges, and how mobile technologies can be used to improve education	The goal of this study was to further understand and examine the impact of mobile phone usage on teaching and learning practices and goes on to look at the opportunities presented by the use of digital media on mobile devices

2013/exploring major challenges and benefits of m-learning adoption-review	Exploring	Mixed methods	explored current available literature, discussions	This paper explored current available literature and expands on the M-learning concept, in order to get a good background on the benefits and challenges of the M-learning, adoption and establishes a relation between modern mobile technologies and current learning paradigm	The strength of this paper is the result of explored current available literature and expands on the M-learning concept And find out the benefits and challenges
2014/designing an effective mobile-learning model by integrating student culture	Implementation	Design-based research	-	A proposal of designing and developing Mobile Learning Model	The potential outcome of doing this research is to Designing An Effective Mobile-learning Model By Integrating Student Culture
2014/mobile learning aspects and readiness	Survey	case study	Questionnaire	The paper concludes that using mobile in learning can be one of the suitable technologies to enhance the learning systems, so it covers the aspects and the readiness of using mobile technologies in education	contribution of this study is that; it's the first study in, it used one of the Sudanese University as a case study, which can conceder it as reference work for this region and "may be" for the under developing countries.
2015/mobile computing trends in saudi arabia an exploratory study	Survey	Exploratory Study	Survey, usage data	The main purpose of this research was to gain an understanding of the adoption behavior of mobile computing In particular, it aimed to acquire new insight into mobile computing trends, specifically in Saudi Arabia, in order to develop hypotheses and formulate precise criteria for mobile computing evaluation	The purpose of this research paper is to develop and examine an understanding of the adoption behavior of mobile computing in Saudi Arabia.
2015students' perception of their m-learning readiness	Survey	Case descriptive	online survey	This paper has presented the findings of a pilot study to Examine psychological readiness for m-learning among Saudi higher education students.	This paper aimed at achieving a better understanding of the psychological readiness for mobile learning (m-learning) among Saudi students also highlighted the unique opportunities m-learning provides from the perspective of Saudi students

OBJECTIVE of THE STUDY

The current study shows some aspects of the mobile learning, mobile education as one of the new ways in education, the obstacles surrounding it, to identify the factors that helped the emergence and spread of this type of education, concept, characteristics, application requirements, mechanisms or techniques used in it, the educational benefits of its use in education, and finally the challenges or difficulties they are facing.

THE IMPORTANCE of STUDY

Importance of the study stems in that it deals with an important educational issues and that is the need to integrate advanced technologies in the world of communications, and benefit from the service in the educational process. In addition to the foregoing, the importance of this study is that it also does not stop at dealing with how to take advantage of mobile phones in education, but also extend to review the challenges or difficulties facing used in it, and make some suggestions to overcome them.

STUDY QUESTIONS

According to what has been displayed in the goals and importance of the study, the current study can determine the problem in an attempt to answer the following questions:

- *What are the reasons for using a mobile phone in education, the concept of mobile education, its characteristics and its implementation requirements?*
- *What are the educational tasks provided by mobile phones, also summarized some of the challenges facing the use of mobile phones in education.*

THE ORGANIZATION OF THE STUDY

AND ACCORDING TO THE OBJECTIVES OF THE STUDY AND QUESTIONS, THE STUDY IS ORGANIZED AS FOLLOWS:

- *The reasons and justifications, which called for the need to use a mobile phone in education.*
- *The definition of the concept of mobile education, its characteristics, and the requirements of its application.*
- *Review of the importance and benefits of mobile education for both the teacher and the learner.*
- *The services provided by mobile phones in many educational tasks, and to clarify how to use them to do so.*
- *Illustrate some of the challenges of using a mobile phone in education.*

THE MOTIVES OF USING MOBILE IN EDUCATION

- Many of the studies on mobile technology in education indicated that the reason behind the use of this technology in education due to the following reasons [15]:
 - *The mobile phone is the most commonly used technological devices in our hands.*
 - *The mobile phone is a social tool, which is a good tool for collaborative learning, where information is exchanged through it.*
 - *Mobile and portable devices can be used anywhere, anytime, at home, at work, on the train.... etc.*
 - *It provides an opportunity for learners to connect with the international information network, and easily interact with the other parties to the educational process.*
- The multiplicity of services that can be provided by mobile devices in the field of teaching and learning.
- The proliferation of styles and patterns of distance education, and prove their feasibility in addition to the need for communities to this type of education.
- Contributing to overcome the suffering of traditional education problems, such as: Limited educational opportunities available now and in the future of large sectors of society, Or for some categories of students who do not meet the traditional requirements for admission to the current universities, Or for other reasons, such as: age barriers, barriers of geography and strict rules for admission and acceptance.

THE PROPERTIES AND CHARACTERISTICS OF MOBILE LEARNING

Although the mobile learning is a form of distance learning, but it has characteristics that make it is not affected by time and place, also it provides a rich environment with the tools that support the educational context of a lifetime, and the most prominent of those characteristics are as follows:[13]

- The mobile learning all the time and every place , relying on the use of wireless technologies, provide freedom in learning inside and outside the classroom , to achieve participation , despite the geographical distance between the students each other and between them and their teachers , mobile and education to achieve the concept of continuous learning.
- Mobile learning allows the learner to communicate rapidly with the international information network.
- Easy exchange of letters between the educated each other, and between them and the teacher via SMS messages or MMS, and also facilitates the exchange of files and e-books, for example, through Bluetooth technology.
- The cost of this technology is relatively low compared with the desktop computer.
- Small size of the technology which facilitates the process of moving them with their contents.
- Quick access online services and even the exchange of letters between the learners themselves or between them and the teacher
- Models provide a new process offers flexible educational experiences for learners due to the following reasons: Initiative to acquire knowledge, flexibility to support a large number of students, the interactive learning process, convenience in learning activities, and integration in the educational content

THE REQUIREMENTS OF M-LEARNING

To implement mobile education properly there must be a set of necessary things including the following:

- Availability of the necessary infrastructure for education, which include the provision of mobile wireless devices, wireless networks etc....
- Convinced Department of Education, students, and parents. Convince them of the importance of the integration of mobile learning technologies in the learning environment.
- Choosing the right mobile learning pattern according to the position of education.
- Convert the content of educational materials to fit the formula with the mobile education.
- The training of the human element in the co- activation of mobile learning model.
- The establishment of private records of students who want to register include the information necessary to identify the device and the network, which will serve them
- Lay the foundations for commercial and financial transactions with the operator of the network
- Finally, the provision of financial support and appropriate budgets whether it is done from the appropriations for the budget of the Ministry of Education.

TECHNOLOGIES OF MOBILE LEARNING

TABLE 3 SUMMARIZE CATEGORIES OF MOBILE LEARNING AND THEIR TECHNOLOGIES [4]

TABLE 3: CATEGORIES OF MOBILE LEARNING AND THEIR TECHNOLOGIES

ASPECT OF MOBILE LEARNING	NETWORKS	TECHNOLOGY	TECHNOLOGY CHARACTERISTICS	DEVICE
Portable e-learning		Cable	Direct, wired connection. Least complicated, least flexible	PDA, iPad, flash drive, Smartphone,
Classroom learning	Local-Area Networks, rally internet	GSM	Global System for Mobile - the major telephone and data standard used in World	laptop computer PDA's, mobile Phones cell phones
		Wi-Fi	IEEE standard 802.11 for wireless networking,	
		IR	Infra-Red light - Inexpensive, but increasingly out of favor as it requires line-of-Sight	
		Bluetooth	An increasingly common networking Standard found in many devices. Costs continue to go down and capability goes up, but it does have power requirements.	
Rural mobile learning	Wide-Area Networks	Wi-Max	A promised wireless, broad-reach, Broadband network.	Palms, 3G cell phone , PDA, smart phone and iPods
		GPRS	Code Division Multiple Access.	
		GSM	Global System for Mobile – the major telephone and data standard used in World	

THE MERITS OF M-LEARNING

Previous studies have indicated that useful mobile devices in education and teaching by facilitating the tasks of teachers , and mobile devices also is helping learning tools for students , as well as help the parent learn to follow their children , has been such benefits as follows [11],[14]:

- Lectures and discussions can be broadcast directly to students regardless of where they are.
- It provides for undergraduate students associated with non- regular time - receive ads or administrative decisions of urgency, change the date of a particular exam or an apology for lectures.
- Mobile devices enable teachers to review the duties and the work of students.
- Helps students and researchers to create a small library, either from books, lessons, as well as revisions and annotations, as well as video files.
- Provides direct communication between the parties to the educational process, between the student and the educational institution, and between parents.
- Ensures the use of these techniques greater participation of students in education via mobile devices they use in their daily lives
- These mobile devices are used in education to achieve the principle of collective.
- Many of the studies and research was decided that mobile technology gives new opportunities for traditional learning in the classroom as well as in the pattern of learning - blended learning.
- Bridging the digital divide because those devices are less expensive than desktop PCs.
- Break the psychological barrier against the learning process and make it more attractive, it used as a technique to help learners who have difficulties learning.
- Mobile technologies in education were able to solve some of the problems of students who are not able to integrate into the traditional education.
- Education through mobile devices, adding new activities which led to the vitality of traditional education.

THE ROLE OF MOBILE DEVICES IN EDUCATION

In fact, the mobile phones can accomplish many of the tasks of education and services, the most prominent of these services include:

- Short Message Service (SMS), Using SMS in the educational process to perform many tasks , learner gets the information more easily , as well as communicate freely with the teacher at any time , ask questions and receive answers easily , and the exchange of letters between the educated each other , and between them and the teacher both on matters educational or social .
- Multimedia Messaging Service (MMS), Service to send and receive picture messages or audio files or video files and text messages, MMS characterized by the content of messages greater than SMS, they are an extension or evolution of technology in messages as general.

- Wireless Application Protocol (WAP), Take advantage of this service and employment in the field of education and presented by many of the Internet services in the field of education - especially if what has been done through mobile phones. It enabled the students to learn according to their needs and their potential regardless of geographic location, to take advantage of electronic libraries, e-books, and databases on demand, direct contact and other information services talks; where many of the E-Learning Institutes - virtual universities evolved.
- General packet radio service (GPRS), one of the innovative technologies for the transfer of data across networks (GSM), and is used to access information via mobile phones devices, and distinguishes of this service as it provides constant contact to Internet.
- MSN, learner Receive messages through MSN Hotmail or MSN Messenger
- Bluetooth services, take advantage of this service in the educational process, it can be used to facilitate the learning process and increase communication between the student and the teacher, by providing immediate evaluation and response to students immediately in addition to the exchange course content.

CHALLENGES FOR M-LEARNING

Despite the massive and rapid advances in mobile phone industry, and the availability of many services of it, and take advantage of the mobile phones in education, in addition to many of the studies in the field of mobile phone that has shown success in education, however, there are obstacles or challenges facing the employment of mobile phone technology in the educational process [12]

Here we review some of those challenges and what we must do to overcome them, the challenges are as follows:

- Need to establish infrastructure.
- The small size of display screens.
- Storage capacity is limited, especially in mobile phones and personal digital devices.
- The large number of models leads to a lack of familiarity with the hardware, particularly with different screen sizes and forms.
- Hardware prices are still high, especially modern ones.
- Cheating is easy via mobile devices - especially mobile education.
- The difficulty to creating Mobile user interfaces that meet all the needs of students, with different languages and levels.
- Psychological problems caused by the sense of isolation and separation or being alone.
- In general lack of confidence in wireless networks, security Threats which aspects from the user side and the management side[16].
- The weakness of the design leads to weakness course material content, in addition to the different assessment methods.
- The difficulty of entering the information into those phones because of their small size keyboards in addition to the difficulty of using animation, although there are some solutions such as Virtual Keyboard.
- The need for regular energy Chargers.
- Finally, technical and security difficulties such as congested networks, poor send information, difficult to transfer media files, and general weakness in the phone software. Thus these difficulties need a study to know for some solutions in the near future.

CONCLUSION

The author concluded a set of results from the most prominent: the mobile phones can be used and employed in the education system, in addition to its uses to send and receive phone calls, Mobile phones are rich technologies and can provide many benefits to the educational process, and give new opportunities for traditional learning in the classroom and outside the classroom, the mobile learning is a new form of distance Learning, which has become widespread today all over the world and serving tens of millions of students, and mobile learning its ability to reach individuals in any place and at any time. An addition it produces blended learning; which is the result of the integration of information and communication technology in education. Also conclude that the implementation of Education requires mobile: infrastructure - the financial cost - awareness - training - understanding the nature of mobile education. The novelty and importance of this area, it is recommended researcher conducted many research on the feasibility of this model and how employed in the teaching and learning process. The limitations of the paper is that it shed light on the concept of mobile learning, challenges facing the implementation of mobile learning technology, But the author neglected any solution of these challenges, example security for Content or copyright issue from authoring group through wire and wireless networks

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