

## MOBILE LEARNING TECHNOLOGY: A NEW STEP IN E-LEARNING

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### ABSTRACT

The objective of the current study was to develop a cognitive system, in which the characteristics of mobile learning technology, its nature, context and benefits are presented. The majority of previous literature has an agreement that mobile learning is one form of teaching learning processes possessing similarities and differences with e-learning. It is mainly based on the concept of wire and wireless communication technologies, as the individual learner can access the learning material, lectures and seminars whenever he desires and wherever he was, whether inside the classroom or outside it. This creates therefore a new learning environment in the context of the different learning settings. Such settings are based on the interactive cooperative learning, the facility to share information within the individual learners, and between the learners and the lecturer or teacher. It was found that the main challenges hindering the implementation of mobile learning in education range between the access to protection technologies for the learning content, the availability of adequate devices to perform the tasks targeted by the use of mobile learning, their storage capacity, their loadings, in addition to other educational challenges mainly concerned with the designing the educational programs able to meet the requirements of mobile learning and able to consider the individual differences between the individual learners. Finally, other obstacles such as lack of computer literacy between both the teachers and students populations, their underestimation to the value of such learning technology, the high cost for the inputs of such learning technology, lack of appropriate integrated educational strategies to ensure the adoption of such learning technology were all some of the main obstacles hindering the implementation of such technology in the different educational domains. The study concluded with the need to reconsider the inputs of the teaching process and the methods used in it to be better able to absorb the technological and cognitive revolution in communities, and thus be able to address the different needs of students' populations and to keep abreast with the modern communities we all live in nowadays.

**Keywords:** *Leaning technology, E-Learning, Mobile Learning, Wireless Learning Environment, Wireless Revolution.*

### 1. INTRODUCTION

The use of learning technologies have evolved over several stages, and each use of these were a reflection of the role played by education in the historical stage. They are also related with the most dominating learning theories within a specific historical period. Finally, it is related with the teaching methods dominating in a given time period. They are considered an integral part of an integral learning and teaching system. The focus began on the selection of the different learning material, equipments, tools and how to effectively using them in the context of the teaching learning process, which contains many spatial, temporal,

material and human elements, taking into consideration in the same context the learners' individual differences to achieve the desired goals in this environment, the meaning of learning technologies has exceeded only using educational learning and teaching, but the focus was on the inputs, operations and outputs of the educational process, or what is termed systems pattern. This pattern emphasizes on the integrated perspective of the learning technologies role in the learning teaching process and its relations with other elements in the educational process, as the use of learning technologies is designated to achieve the required goals consistent with the used curricula, tools, educational goals, teaching methods, human



and material available resources, and the dominating educational administration, in addition to other factors [1].

The term learning technologies is one of the elastic terms subjected to many interpretations, and this made it hard to define the main elements of such term. This is due to the rapid changes which appear every day in the different domains. As known, any beginning starts simple; it is well defined, and easy to define. Then, this thing becomes more complex overtime, thus it difficult to define the elements of such thing. This applies to learning technology, which begins in most cases with simple applications, and these applications start to be more complex. Technology in general can be traced back to the beginning of the human history, and can be seen in the different domains of the life we live nowadays. Technology plays a vital role in defining the present and the future for the quality the individual lives. Technology is one of the most changing factors in the life of individuals, and the change captures the quality of the technological applications and in all levels. In the simplest definition, technology is a thinking approach, a style to function, tools to be used to achieve a certain goal, and is one of the cognitive domains to ground the bases of technological applications. Furthermore, technology is one of the acquired experiences and is also a problem solving method [2].

Hawkins and Collins [3] pointed out that the use of technology in education promotes the different educational communication. In their opinions, this increases the opportunities to participate, engage, think and interpretation to provoke some kind of balanced development in the skills, emotions and cognition. They are also a method the instructor can use in providing the individual learners with analytical skills via the use of open discussion, research and assessment to achieve the desired goals.

However, the educational industry has entered the fourth stage of its development that is the use of Communication and Information Technology (ICT). This revolution in the educational industry was preceded by three previous ones. Carnegie Foundation summarized these three revolutions as follows:

- 1-The invention of writing.
- 2-The use of textbooks in schools after the invention of printing.
- 3- The appearance of mainstream education.

The fourth revolution can contribute in the achievement of the mainstream education by using and employing E- Learning technologies, communication and networking technologies to facilitate the access of different learners to the learning material. Such technologies are also capable of promoting learners' individual skills, meeting their desires and needs. Modern educational trends emphasize the need to find the most effective educational methods to provide learners with the optimal interactive learning environment to capture the attention of individual learners, to provoke their interests, to motivate them to learn, to share information and different ideas with other learners. In this context, the student is not a passive learner; he is an active participant in the learning experience. He always searches for the right information with all available tools. In doing so, the learner employs different practical and scientific procedures such as observation, synthesis, comprehension, analysis, inference, and data interpretation. These activities are conducted under teacher' supervision, guidance and assessment in the classroom. The prevalence of modern technologies such as the use of mobile phones, computers, Internet, and all related applications such as the use of multimedia and other computer software among schools students and university students. These applications are one of the most effective means to create rich learning environments and other forms of educational systems rich of learning resources, training, rehearsal, development, and self development opportunities able to meet the needs and desires of students, motivate them from one hand, and to serve the educational process and promote educational outcomes from the other [4].

In his study, Luecy [5] argues that the increasing use of learning technologies, communication tools and educational media in the different activities has become one of the prevalent characteristics of the world today. It is also based on deeper understanding for the role cognition and human capital play in the development of educational system and the overall progress in societies. Nowadays information technology is the basic element in the economic development. The rapid advances and the ongoing changes in economic technologies not only effect in the size and momentum of development, but also in most life domains. With this vast development in information technology and the processing methods used in information technology comment, production resources, production tools and technology distribution channels information technology has



become a basic element in economic development. It is estimated that the information technology industry has exceeded an economic value of more than one trillion U.S dollars in the new millennium. It also estimated that the users of mobile phones will total more than 1.5 billion people in 2010 [6].

This has a great effect in the entry of modern societies to post industrial revolution era. The new revolution is an electronic one, a revolution appearing in the second half of the 20th century which emerged with the use of computers, software, CDs, multimedia, satellites. These all electronic tools resulted in the development of communication systems, computer networks and information technologies which have taken various forms. All these information systems seek to acquire process, store, retrieve, distribute and use different forms of information. All these factors in addition to other factors have contributed in the emergence of what is now termed as e-learning. E-Learning is one of the tools to make distant geographical areas closer. At the end of the 20th century and the beginning of 21st century, mobile phones increased in use and prevalence rates, announcing the birth of telecommunication era and the significant role such telecommunication tools play in the different life domains [7].

These developments and advances had direct and significant effect on learning and teaching process. The traditional models of learning and teaching are no longer most effective tools for teaching. Teachers are no longer the center of educational process and textbooks and schools are not the sole source of "information" with the access to technology, information technology era, more focus was on the integration of telecommunication technologies, mobile and portable phones in education, leading to the appearance of new forms of learning, that is mobile learning as one domain of distant learning applications. Mobiles' learning is now considered a complementary e- learning model to complement the current practices in education. Mobile learning calls educators to use modern mobile technological tools and devices in learning to provide a new form of teaching. Such new form of learning and teaching is compatible with current modern trends resulting from globalization, is consistent with individual characteristics of learners and textbook used in school subjects. Mobile learning is cheap, enables the transfer of educational process out of schools and traditional classrooms, thus provides spatial and temporal freedom for both teachers and students [8].

The concept of mobile learning is traced back to the beginnings of 1950s of the 20th century as in

appeared in the use of mail in education. This concept evolved in the 1980s and took different forms and several terms were adopted to describe such form of education such as movable learning, to mobile learning and were termed in the last few years as "portable learning". In the last few years, networking learning of third generation learning were terms used to describe such learning. But, and with the advances in communication systems, information networks, internet and the wide use of computers, and with more focus of knowledge, how to acquire it and the transfer of knowledge via the use of rail able tools in doing so, and with the different advancements that exceeded expectations different forms of education such as virtual learning, virtual classrooms, on -line learning, internet based learning, digital learning, e-mentor, blended learning emerged. The use of different terms must not contribute in the appearance of different kinds of confusion in the educational process, but it must be seen as one opportunity to capture the various technological advances in the interest of education in general [9].

## 2. SIGNIFICANCE OF THE STUDY:

Significance of the current study 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 of 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 and whenever the learner desires. The current study will cover a wide range of topics relating the context of mobile learning, its elements, characteristics, advantages, and benefits. The study will identify the role played by technology in supporting education, solving educational problems, promoting educational outcomes linking it with real life situations, then addressing the similarities and differences between e-learning and mobile learning.



### 3. PROBLEM OF THE STUDY:

The current scientific advances and the technological development has been the main factor in the appearance of mobile are, as technological tools are transferred between individuals and mostly available for different learners, even put in the pocket of all interested in mobile technologies. The use of small technological tools is available anytime and anywhere the individual wishes to use such technologies. Mobile phones are the major tool used in life nowadays as it is one of the most prevalent technological tools. Some studies have indicated that most learners have access to mobile phone regardless of their age, gender and socioeconomic background some authors have indicated that the number of mobile phone exceeded the total number of people living in a certain country [10].

This fact has motivated some governments, both in developed and developing countries, to use all new innovations in the teaching- learning process. Such innovations have been used to develop national educational systems, to use the educational inputs in the best methods available to better serve individuals and communities in general.

Mobile learning technology is one of the most interesting topics in daily discussions, and is one of the most addressed issues in modern educational field, especially in light of the technological advances we live nowadays. Furthermore, mobile learning is one of the most effective means to renewing the different school subjects as it is based on the integration of modern technology in different learning setting, ones that are based on cooperation and interaction between all learners designated to create enriched learning environment able to meet the individual needs of learners, increase their achievement productivity reaching to high quality learning outcomes able to meet the vital demands of current stage [11].

Thus, the current study will shed light on the concept of mobile learning, or what is termed by third generation of online learning in light of the rapid changes and rapid cognitive developments and scientific and technological advances. Such changes have dictated the new trends in the educational field, the new responsibilities and tasks to be assumed by education, which have motivated both students and teachers to think about the significant stage education experiencing to be more qualified and competent to deal with technological advances.

### 4. OBJECTIVES OF THE STUDY:

The current study sought to achieve the following objectives:

- To shed light on the concept of e-learning including mobile learning.
- To define the elements of learning technology and mobile learning.
- To focus on the elements and characteristics of mobile learning environment.
- To identify the similarities and differences between mobile learning and e- learning.

### 5. QUESTIONS OF THE STUDY:

The study addressed the following questions:

- What is the nature of mobile learning technology?
- What are the elements of mobile learning technology?
- What are the benefits and advantages of mobile learning technology?
- What are the main challenges hindering the implementation of mobile learning technology?

### 6. STUDY DESIGN:

The researcher will adopt the analytical descriptive approach in collecting data, information, facts concepts and opinion related with dimensions of the current study. The main objective is developing an integrated cognitive system in which the problem, background, objectives and significance of the study become more apparent in the context of the current study. In doing so, the researcher will review previous literature addressing the concept of mobile learning. In addition, the researcher will review some international experiences in the implementation of e-learning to make use of such experiences in identifying the concept of mobile learning contexts, justifications, elements and its use in the educational process.

### 7. PROCEDURAL DEFINITIONS:

- E- Learning: teaching method in which modern communication tools, computer technologies are used in the context an interactive process between all involved in the educational process to achieve specific

- objectives serving both individuals and societies at present and in future.
- Mobile learning: A new linguistic term used to indicate the use of wireless cell devices mobile and portable, and all related technologies in the context of a cooperative learning teaching context. Mobile learning is an extension for e-learning and is considered one form of distant learning.
  - Learning Technologies: A systematic process to plan assesses and implements different domains of the learning teaching process. Learning technologies is are designated to achieve specifics, well defined and clear special and general objectives based on the results reported in educational research via employing a set of human resources and various learning resources to achieve an different learning.

## 8. STUDY PLAN:

After discussing the study background, significance problem, questions, the study ill adept the five main dimensions:

1. First dimension: The concept of learning technology and mobile learning.
2. Second dimension: The context and technologies used in mobile learning.
3. Third dimension: Mobile learning characteristics, advantages and benefits.
4. Fourth dimension: Similarities and different between e-learning and mobile learning.
5. Fifth dimension: Challenges and difficulties hindering the use of mobile learning in education.

### 8.1 First Dimension: Learning Technologies, E-Learning and Mobile Learning:

Learning Technologies: some people believe that learning technology is only limited to the use of computers, internet, multimedia and learning material in the teaching learning process.

This belief is also supported by the nation that the main domain for technology is related to electronic minds, but the fact is for a way from this belief. Technology is concerned with planning, designing, implementing, and assessment of different domains in the learning teaching process based on results reported in

the educational research and human resources and various educational resources according to predetermined general and special educational goals in an attempt to achieve high quality education [12].

In light of this nation, the concept of technology goes beyond the use of devices and educational tools. It also exceeded the concept of traditional learning and teaching and technology has become more with how to use modern educational systems and methods employing all modern potentials computer networks (internet, intranet) and all related software to provide best educational products with low cost and high speed, without complexity, away from spatial and temporal constraints. The most significant factor in humanitarian science is not the use of different equipments and devices, but is more concerned with the adoption of a systematic cognitive approach which is the basic element in the functions of such equipments and devices and how to use them to achieve effective, high quality predetermined objectives [13].

In his study, Al- Ghazaw emphasized the role of educational systems in their quest to re-innovate themselves and their ability to make a radical change in providing various educational products and services with high quality, which may reflect the integrated through perspective toward the inputs of educational systems and their reciprocal relations with other systems[14].

E- Learning: some teachers and students think that their use of personal computers or data show projectors in the classroom, or to go to computer labs and to sit in front of computer and using the internet is basically the use of e-learning technology. Others think that e-learning is achieved through distributing computers and multimedia on schools, universities and offices. The prevent belief is that the main use of e-learning is smart and electronic minds which are the fundamental characteristic of scientific and technological progress.

On other hand, the use of e-learning technology has become one of the main aspects in education in the last few years, several definitions have been proposed to define the concept of e-learning, several conferences were organized and many studies have been conducted addressing the concept of e-learning. Mass media channels have dedicated many programs discussing the use of e-learning, to

identify its objectives and role in the educational process [15]. But, the reality of e-learning is far away from these beliefs, as it is in fact an integrated educational system (inputs, operations, and outputs) that include the following elements:

1. Material components: These include infrastructure, computers and high speed internet networks.

2. Software: These include information management systems, which are internet based systems providing management, and follow-up for the individual learner concerning the access to computers, how to use them, enabling the learner to use the educational services, managing educational content. Information management systems assume the following functions:

Recording learner's data.

- Scheduling courses and educational plans.
- Learners access to learning material.
- Assessment and test.
- Communication between learners via the use of e-mails or other forms of communication tools.
- Follow-up learners performance- content management systems. Learning Management Systems are advanced systems controlling the learning content and may be open or closed.

3. Human resources: These include system manager, educational designer; these include system manager, educational designer, and some specialists in different forms of graphic, programming, quality control and support technicians.

4. Regulations and rules:

These include assessment methods student's attendance publication and quotation rights individuals and information privacy, credentials [16].

Thus, e-learning is systematic method of learning using modern communication technologies such as computers network, software and audio-visual multimedia, graphics, search engines, e-libraries, e-gates, whether they are provided via distant learning technologies of provided in the classroom. The most significant aspect here is that the use of e-learning is far beyond the use of machines, learning tools, and random traditional methods, it is in fact a complete revolution based primarily on the revolution in computer technology,

software and communication. This integration is no a mere arithmetic issue, it is more concerned with doubling the technological and scientific production in the least time, with the least cost and the most effective means possible. Such approach emphasizes the integrated perspective of e-learning system and its mutual relations with other forms of systems. E-learning plays a vital role in transforming traditional education to the modern world, a world relying on modernization innovation, promotion of educational outcomes to keep abreast with economic development plans, work force market, and consistent at the same time with students needs, modern developments and societies aspirations in general [17].

Mobile Learning: the term mobile indicates mobility in language dictionaries The concept of mobile or distributed learning can be traced back to the 1980s when Mike Wiser used the term "distributed computerization" indicating the increasing use of computers in the various domains. People engaging in a computerized electronic environment means that everything is computerized, and digital processing has entered life domains. The use of computerization is no longer limited to computers conventional uses, which consist of CPU, Keyboard and screen, most computers are operating using microchips, and this includes devices used in education, starting from conventional personal computers to digital cameras, and e-book reading devices, which in future [18].

Mobile learning is a form of combinational learning which consists of a combination of e-learning and teacher's instruction. In this form of learning, student's gets the available learning material and multimedia on the Internet and the teacher directs him to related information and required tasks. Mobile learning is based on the constructive approach in learning via the use of discussion, constructive learning activities and listening to lectures through the available communication channels. Therefore, both teachers and students need to understand the complex relationships, cognitive tasks and learner's social-emotional attributes to be able to create social educational environment that have positive effects on individual students [19]. Mobile learning is an electronic educational system based on wire and wireless communication channels, and it enables the learner to access to the learning material, lectures and seminar anywhere and whenever he desires, and without the need to be in classroom. Vavoula and Shaples (cited in Dahshan,) proposed three methods to enhance the effectiveness of mobile learning [20]:



1. To use time as effective as possible.
2. To liberate learners from spatial constrains.
3. To address other life domains.

Such contexts create in turn new educational environments in the context of settings based mainly on cooperative learning, facilitating information exchange and transfer between learners from one side and lecturers or the others. It was argued that mobile learning is the use of mobile devices in teaching learning, training, learning task management, homework and assignments management and other educational domains. Mobile learning is accessible to the majority of students, it is easy to use and can be used in any mobile electronic device. In sum, mobile learning is not just an extension of e-learning. [21].

The added value provided mobile learning to the learning teaching process includes two domains: 1- Cognitive, represented by mastering reading, writing mathematic and research skills. 2- Educational, represented by changing behavior, and the acquisition of life skills and learning motivation.

Thus, it can be said that mobile learning is a true feasible interpretation for distant learning philosophy based on expanding learning opportunities for all individuals seeking to learn, reducing the economic cost for learning compared to traditional forms of education, as distant learning philosophy emphasizes the rights of all individuals to capture all available learning opportunities without any form of spatial or temporal Constraints. In distant learning environments, the learner is able to continue his learning at his own pace, and based on his previous experiences and skills.

Distant learning has been very successful in providing an educational service compatible with the needs of all students needing such an educational opportunity, and it enhanced the notion of self-learning, which all contributes on deeding the concept of educational democracy [22].

## 8.2 Second Dimension: Mobile Learning Context and Technologies:

Mobile Learning Context: Designing mobile learning context is not limited on using devices and cell phones, but mobile learning must be an open dynamic system, in which software and technology are fully integrated with tools, devices and development means so using and re- using all these elements on objective, logical and accepted standards to promote the flexibility and efficiency of distant learning in general [23].

Thus, mobile learning context include the following:

1. Applicable services, which contain teachers' and students' service such as information services, library, cards and language translation...etc.
2. Integration through web services between content and content applications, within an applicable frame as it is possible to transfer data, sound, video, graphs, and files and to dissimilate content using safe management tools.
3. Delivery services, which are used to deliver learning content and learning material via internet using wireless devices such as mobile phones, e-mail, wireless personal computers and digital assistant device.
4. Individual services and these contain teacher's learners and administrator services and the interaction between these stake holders.

Mobile learning context is similar to learning setting as the individual learner can engage in the learning environment whenever and wherever he desires. Mobile learning implies the existence of learning opportunities everywhere and at all times. One cannot see mobile learning, but it is easy to access learning opportunities using it through mobile or portable devices. Mobile learning context contain educational entities, various portable devices connected using wireless networks with each other in an open space, a space that provides the learner the opportunity to interact with such connected entities, Such entities can be defined as follows[24]:

1. Laptop, pocket computers, mobile phones, e- book readers and digital aids.
2. Wireless technologies such as Bluetooth and Wi - Fi.
3. Doctors used to verify students attendance in different courses.
4. Mobile learning context sever, learning strategies and database, as the server manages network resources while strategies support students' understanding through interaction, feedback and analyzing students responses to questions posed, analyzing their responses in group discussion and providing them with needed information. As for the database, it stores all data concerning electronic devices, user and interaction between both of them.



### 8.2.1 Mobile Learning Technologies:

1. I Pod Touch: Portable media player which enables users to upload music, e-books, images and videos, I pod contains address book, calendar, storage, devices, e-books reader, information and files exchange, projects collaboration between learners and lectures recording, high cost of such technology is the main reason hindering the accessibility by all students for such technology. Furthermore, it only provides one –way communication, thus no interaction is possible using it. Finally, I Pod has a limited screen.

2. MP3 Player: To download music, audio files, and to listen to audio lectures. MP3 contains movable parts as opposed to CD's. it provides high quality sounds, but cannot be used in interactive settings between teachers and students or between individual students.

3. Personal digital Assistant: A devices carried in hand or can be put in pocket. It combines between computerization and internet access, and it contains in one system networks, reminder, address book, productive tools Bluetooth and W- phone technology. It is equipped with a special pen, and uses sounds, videos and flash films as players. It is able to show documents, and provides users the opportunity to access internet, web contents and text message. It can be used for complete storage application, and contains a clear, easy to read screen. It combines computerization applications and Communication tools in one device. Data can be entered using keyboard, or other technologies. The main disadvantage of such technology is that it is bigger than other mobile devices, and has limited capacity to enter e-mail without the use of other entry technologies.

4. USB Drive: A complete device for data storage. It is a small portable engine compatible with all modern computers. It can store huge numbers of lectures, seminars, courses, projects, audio files and videos. It can be used to transfer files from home to school, and vice versa. One of its main disadvantages is that it is used only for storage purposes.

5. E- Book Reader: It is used to read texts, and can be used to read hundreds of e- books, newspaper and journals. It searches complete texts, easy to find students can use it to download textual learning material, e-materials, and textbook and to conduct research. It contains a clear, big screen to

facilitate reading, even in dark places. It contains phosphoric digital signals, allowing users to read texts showed on screen. The main disadvantage is that its uses are limited to reading e-books and has a limited computer capacity.

6. Smart Phone: A devices that combines between cell phones applications, a camera, personal digital assistant, MP3 player, and access to internet. Students use smart phone to download sounds, video clips, and audio lectures. Students can switch on sounds, video clips, movies, flash, while showing and editing text documents and access to e-mails, sending textual and immediate messages. Smart phones can also be used for complete storage applications, interactive learning, and international cooperation. Smart phones combine the applications of communication, and computerization within one integrated system. Nineties, the major disadvantage in smart phones is that it contains a small screen, making surfing the internet and reading texts hard. Furthermore, the keyboard of smart phones is small and difficult to use, text entry is hard task and is expensive compared to other computer applications [25].

7. Cellular Phone: Cellular phones are used in SMS and MMS messages to send and receive visual, audio, cartoons, colored, normal, short text and WAP messages. Wireless application protocol is an international standard containing specific communication rules and measures. Such rules and measures were agreed upon by a group of companies, and it helps users in accessing internet using wireless channels via the use of portable micro wireless devices such as mobile phones, and personal digital assistants. Such technological applications can be used in e-mails, pocket computers, and smart phones. It can also provide radio packages services, a new technology allowing mobile phones access to the internet with hyper speed, while users can also receive data, and files, store, retrieve and exchange them using wireless channels.

8. Ultra Mobiles: Students use ultra mobile to download sounds, videos, audio lectures, surfing internet, sending e-mails, text message, entering web and other communication channels and networks applications.

9.General Packet Radio Services (GPRS): A modern technology allowing mobile phones to access the internet with hyper velocity and the





possibility to receive data, files, store and retrieve them using wireless channels.

10. Communication, Bluetooth and Wi-Fi: such application is used to do scientific experiences, research, interactive learning and international cooperation. The main disadvantage of such application is high compared to other computers.

11. Laptop Table: Laptop table is a functional device containing Bluetooth, Wi-Fi and internet application. The main advantage of such application is the ability to transfer sound effects, identifying line, surfing the internet, and transferring video clips and audio lectures, sending e-mails, and immediate and text message, entry registration to websites at home and school. This facilities interactive learning conducting scientific studies and research international experiments and international cooperation. As for the disadvantage of laptop table, it can be summarized in high cast, difficult to carry while moving from one location to other and cannot be used while traveling.

12. Learning Mobile Author: A program that helps teachers and supervisors in uploading their learning material without referring to programmers. Such application contains a simple approach to upload interactive content combined with sounds, videos and text in different languages.

13. There are other computer Application, such as scanners and storage media via USB, digital video players, digital goggles that present information from wireless computers.

### 8.3 Third Dimension: Mobile Learning Characteristics, Advantages and Benefits:

#### 8.3.1 Mobile Learning Characteristics:

Communication technology is one of the leading scientific fields nowadays. Most technological applications such as using the internet computer software, internet and mobile phones include most activities and domains individuals and organizations engage in, as they have the potentials to achieve tow major functions:

Expanding the possibility to access any piece of information. Computer applications are active tools to develop individuals' mental cognitive, performance and attitudinal abilities [26].

The use of e-learning technology has increased widely in education, and these uses

have taken many forms such as mobile learning, which is an extension of distant learning. As this form of learning is fairly modern, and due to its significance, several studies addressed it, including:

1. Mobile teaching: The future of learning in your hand.
2. Mobile learning: The next generation of learning.
3. Technologies: Transforming the future of learning.
4. Literature review in mobile and learning.

Several international scientific conference have been organized [27] addressing the concept of mobile learning. These conferences identified the following characteristics for mobile learning:

1. Mobility: The transformability of learning away from a fixed point, without any spatial and temporal limitations, away from traditional classroom environment.
2. Adaptability: The individual learners is given adequate freedom and his abilities and desires are respected when interacting with all educational community members and without the need to site in front of computers screen is specific time in predetermined locations.
3. Freedom: The individual learner is given adequate freedom in and out educational organizations.
4. Interaction and Collaboration: Students interact and collaboration with each other and with teachers.
5. Access: The students can access learning material whenever and wherever they are.
6. Easy to travel with educational devices due to their small size.

#### 8.3.2 Advantage of Mobile Learning [28].

1. One form of e-learning based mailing on the notion of assimilating learning, the mobility of it beyond spatial and temporal limitations.
2. Providing a deeper concept of what is described as achieving the best results anyplace and in anytime.
3. Transforming from learning based on specific time and location to a concept of learning accessed anyplace and at anytime.
4. The ability to deliver audio, visual and text material in distant learning forms.
5. Controlling learner's conscious response and information flow.



6. Providing the opportunity of social, interactive, and networking learning.
7. Saving time and cost for learners.
8. Velocity of storage and operating efficiency.
9. Cleaners of audio, visual presentations, and scientific designs, figures and charts.

### 8.3.3 Benefits of Mobile Learning:

In addition to the characteristics provided previously, proposed the following benefits for mobile learning [29]:

1. More focus on learners and the ability to meet their needs.
2. Supporting students with high competence in using technological devices.
3. Supporting student's special needs.
4. Learning material can be accessed anywhere and at anytime.
5. Facilitating cooperation between learners.
6. Reducing cultural constraints between students and teachers via the use of different communication channels.
7. Depending on more numbers of laptop compared to PC's.
8. Using styles pen in writing in educational devices makes learning easier compared to using keyboard.
9. Texts cut and paste applications via the use of e-mails, personal digital assistant and infra red are more effective procedure to do such applications.
10. Engaging youth learners in different learning opportunities via the use of games and other interesting learning activities.
11. Bridging the digital gap as mobile devices are cheaper than PC's.
12. Mobile learning is one approach that depends on the use of various integrated learning activities.
13. Mobile learning can supplement and support learning process.
14. Mobile learning provides some learning activities such as games and stimulation.
15. Maps and schemes can be drawn directly on micro computers screen using software.
16. Mobile learning helps students built their own video clips libraries in specific school subject.
17. Actual learning environment is what mobile learning uses in providing learning opportunities.

### 8.4 Fourth Dimension: Similarities and Difference between Mobile Learning and E-Learning:

The different between reading books paper and surfing the internet is in the way to access information, and the difference between mobile learning and e-learning lies in the way learners access the learning information. But, the technological development, the current status, and the transformation from using wire communication channels to wireless communication channels have resulted in the emergence of similarities and difference between e-learning and mobile learning.

#### 8.4.1 Similarities:

1. Each of them needs an infrastructure and a wide community base in dealing with wire and wireless electronic computer technologies.
2. Each of them needs a high cast technological system.
3. Both provide students with digital literacy focusing on information processing.
4. Students are focus of learning process in both models (Self- Learning).
5. Students in both learning models can access and surf the internet.
6. Both learning models allow communication between individual students and between students and teachers anywhere and at anytime from one hand, and communication with local and international on the other via the use of e-mails and text message.
7. The learning content in both learning models is delivered in the form of texts, images and video clips.
8. Both learning models depend on developing problem solving and creative thinking skills among students.
9. Both learning models are capable of providing learning opportunities to many students.
10. Learning material can be updated continuously in both learning models.

#### 8.4.2 Differences:

1. E- learning use fixed, wire devices such as PC's, but mobile learning uses wireless communication devices such as cell and



- smart phones, micro computers and personal digital assistants.
2. In e- learning, access to the internet is achieved the available telephone service, while mobile learning uses IR when accessing the internet anywhere at any time.
3. In e- learning, messages are exchanged via the internet while MMS and SMS messages are used to exchange information between users.
4. In e –learning, it is difficult to transfer books and files between individual learners, while in mobile learning, Bluetooth and IR technologies are used to exchange books and files among learners.
5. Storage applications used in e-learning are more effective than ones used in mobile learning.
6. Communication channels used in e- learning have low protection levels as learners use more than one device, while mobile learning provides users with more protection as learners use their own devices to connect with others.
7. It is hard to pass devices through learners in e-learning while these devices are easy to pass between learners in mobile learning.

**8.5 Fifth Dimension: Challenges Hindering the Implementation of Mobile Learning:**

The benefits and advantages of mobile learning are countless, but there are some challenges hindering the implementation of such learning model list some of them[30]:

**8.5.1 Technological Challenges:**

1. Printing and distribution rights for learning materials.
2. The available of required devices and potential to meet the rapid flow of information.
3. Battery short virtual age, small screen and keyboards used in mobile learning applications.
4. Low storage capacity.
5. Continuous advances in mobile learning applications. Thus, keeping abreast with them is a hard task.

**8.5.2 Educational challenges:**

1. Learning process assessment in and out of traditional classroom.

2. Cheating in learning process.
3. Digital gap between different students using mobile learning applications.
4. How to support learning process by using various courses containing different learning contents.
5. Designing and preparing educational curricula.
6. Mobile learning position towards learning and teaching theories.
7. Academic and personal disorders among some students.
8. Technological gap between individual students.
9. Some students may develop an isolative attitude.
10. Cartoons are hard to use in mobile learning.
11. Both teachers and students need adequate training on the use of mobile learning applications.

**8.5.3 General Challenges:**

1. High cost for some mobile learning devices.
2. Needs a well-defined strategy.
3. Differences between e-learning and mobile learning conceptualizations.
4. Geographical boundaries.
5. Some learning materials may need editing using various forms.
6. Some students may use mobile learning applications out of context.
7. Easy to breach.
8. More vulnerable and less endurance compared to PC's.
9. Needs an infrastructure, wireless networks and modern devices.
10. Some security breaches for wire and wireless networks.

**9. CONCLUSIONS:**

Education is a social philosophy immortal messages a way of life. Religious and heavenly messages have called all people to learn, and education is one of national demands, and is a basic element in human rights legislation, the equality between all humans, a call for all democratic systems, as education plays a vital role in human development, lead by educational policy makers, and as education is the most effective way to achieve more development, it is a must to connect education and integrate it with the electronic evolution to be more capable of observing future sciences, and to be able to adapt with current



technologies, education ability to innovate, creativity and production.

Based on this literature review, the researcher recommends the following:

1. E- Learning is one of the demands for all educational communities world wide, but high cost and complexity are one of the obstacles hindering the implementation of e-learning and mobile learning in educational setting.
2. More emphasize must be put on the importance of mobile learning and its uses in education, as it serves many community populations with any spatial and temporal limitations.
3. Stressing the significance of using learning technology in teaching side by side with information technology.
4. Entering information and communication technology era require adequate infrastructure and full understanding of all technological concepts.
5. Persuading all people in community that change and development are a must.

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