

## Mobile Learning New Technique to Contribute the Development of Distance Learning Courses, as views from Specialists of Information and Instructional Technology in Sudanese Universities

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### Abstract

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The aim of this study identifying the Mobile Learning (ML) as a new technique to contribute the development of Distance Learning Courses (DLC), as a view by specialists of information and Instructional technology in Sudanese universities. The study population consisted of specialists of information and Instructional technology in Sudanese universities who teaching the information and instructional courses, was chosen as a random sample numbered (46) representing 64.8% of the population. By following the descriptive analytical method, the results was presented and discussed, have shown that Mobile learning technique (MLT) through the provision of services can be contributing to the development of DLC in Sudanese universities in terms of: The development of obtaining process the courses contents at any time and place, and enable them to put their questions in collaborative learning framework and the consequent of storage for content even realized immediate feedback, providing the renewable information base for each learner through interaction with information network and access to content, giving the learner a clear idea of what he needs from the information and how to access and view it. There are obstacles that could prevent the employment of MLT in the development of DLC in Sudanese universities.

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**Keywords:** Mobile Learning ML, Distance Learning Courses (DLC), Specialists of information and Instructional technology, DL

### 1. Introduction

The rapid advancement in information and communication technology and the diffusion of electronic knowledge among universities students in recent years, led to the emergence of a new instruction techniques forms that will serve DL systems, due to various affordances of these technologies. Perhaps one of the most important, ML systems through which to employ the potential of general wireless communications and mobile devices especially in the development of instructional programs offered by DL institutions (Motiwalla, 2007). Mobile devices afford rich and varied communication and collaboration possibilities that are critical collaborative knowledge construction, which would be satisfying the needs cannot the traditional university will fulfill such as teaching adult and lifelong learning. ML included what a new services more than what would offer by computer technology through e-learning in the field of instruction and as a pattern shift, is a true reflection of distance learning, which is based on expanding learning opportunities in front of students, compared with the normal instruction systems (Mahdi, 2008); (Hus& et.al., 2014), and on seizing instructional opportunities unrestricted by time or the quality of the learners, where the learner tracks his learning by himself according to his abilities and speed of learning, according to his previous experience and skills so he embodies the individualized instruction, which means learning each learner depending on his own way and circumstances in the time and place chosen.

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In the same sense, Ally & Prieto-Blázquez (2014) indicated that ML is not about technology, it is about the learner. And the learner is mobile and is at the center of the learning and the technology allows the learner to learn in any context. Roberts (1997) mentioned that, how information and communication technology can be used in various content areas, she summarized that teachers and students will need to know how to select and use electronic resources that provide: The core content for a given curricular area, and the interactive supports that adapt content to individuals' developmental and learning needs, also modifiable tools that allow teachers and students to adjust technology resources to meet individual learner needs.

Today, many technological communication devices are produced in portable form and people have become accustomed to them.

These devices are reshaping users' daily lives in different ways (Robert, 2013). Jeng, & et al. (2010) indicated that mobile technology can offer students multimedia interaction with their peers, like listening to each other and recording their spoken production. Furthermore, mobile technology makes more convenient for students to conduct a wide range of activities, particularly those that can make students interact with each other and share what they have learned.

According to Muir, (2013) there is great potential for using ML in developing countries, but careful planning is required for ML to be successful. Several studies results (Chen & et al., 2008); (Basoglu & Akdemir, 2010); (Ismail & et al., 2010) have confirmed that the use of the ML in many other countries had achieved great success and proved the effectiveness of learning in the instructional process, which justifies the need to benefit from them in Sudanese university education, and DL programs in particular.

## **2. The Framework**

### **2.1 Mobile Learning**

The term 'Mobile learning' has different meanings for different communities. Although related to e-Learning, instructional technology, and distance teaching, it is distinct in its focus on learning across contexts and learning with mobile devices. (Robert, 2013).

Harriman, (2011) indicated that the term ML means: the use of portable devices such as mobile phones, Mobile PDAs and other portable devices and information technology that is used in teaching and learning. Also known as a "form of teaching and learning occur through mobile's mechanisms or environments, through the usage of mobile phones (Kinshuk, 2013).

Thus, there are differences between ML and learning in regular classrooms where all instructional activities based on the correlation with time and place; it also differs from the other forms of DL through what is provided by a rich environment with tools that support instruction context by providing a global movement. So, ML 'personal and portable', it is much useful for distance learners in universities.

Educators in DL have to focus on the mobile devices themselves and more particularly on the characteristics of the learning experience they facilitate and the students who interact with them.

### **2.2 The ML in: Systematic of E-Learning and Distance Learning**

The ML system mainly based on the wireless communication so that the learner can access to instructional materials in anytime, anywhere, and in the classroom; the advantage of time as much as possible and freedom in the place of that would establish a new teaching learning environment based on participatory learning and ease the exchange of information among the learners themselves, and lecturer on the other hand. Accordingly, ML is not only an extension of e-learning as mentioned (Traxler, 2005), it is the future of e-learning (Yahya, 2010).

Since the computer devices and Internet technology have become an integral part of the instructional process; the learning tools mobile would become more ability for mobility, by contrast, has become obtained more easily and widely used, where these technologies provide greater opportunities to use information and communications technology by a large number of users. The advancement in mobile technology, proliferation of mobile devices, and mobile applications, ML has garnered noticeable interest among educators and learning materials developers. (Hus&et.al., 2014). According to Taleb&Soharbi, (2012); Wan g&etal. (2009) ML can provide learners with flexibility and ubiquity to learn anytime, anywhere via mobile devices connected to wireless Internet. Thus, ML is a new form of distance learning, is characterized by the separation of the lecturer from students temporally and spatially, providing wireless and mobile networking technologies opportunities for those who have been deprived of instruction due to various reasons, and spread throughout the world and serving tens of millions of students so as to do important role in reaching out to learners. Moreover, ML provides a new way to delivery instruction without installing complex communications infrastructures. Mobile devices have become all-in-one devices that can be carried and used almost anywhere; consequently, they give learners the opportunity to carry their institution in their own hands (Taleb&Soharbi, 2012). So there are many higher education organization are implementing ML to provide flexibility in learning (Tsinakos&Ally, 2013).

Based to the above, is seen to ML as a paradigm shift, in the DL system because it embodies the individual instruction through the concentration of the learning process about the learner who learns according to his abilities and aptitudes.

The most important properties of ML as follows:

(1) Does not adhere to time and place: which does not require the learner's presence in specific places or times, or sitting in front of desk top computers or phones in specific places. If thee-learning may carry conventional instruction systems outside schools and universities, the ML will take a practical instruction away from any fixed points, allowing the learner to interact with the various parties to the instructional process with out having to sit in a traditional classroom, Which contributes to: provide a deeper concept of what is known as the best achievement at any time, any place and freedom in learning inside and outside the instructional institutions and classrooms as well as the achievement of participation and cooperation that goes beyond the geographical and physical distance between the students, and between them and their teachers. (2) Communication availability via the Internet: Where they communicate via the Internet wirelessly at anywhere, making it easier to process access to the Internet and browse at any time.(3) Easy transport: The small size of mobile devices and personal digital devices allows the learner to movement freedom during his learning, making easy to get an instructional options, that wants to learn, according to his needs.(4) Supporting the instructional learning practice: The ML can contribute significantly to the instructional learning process through supporting the provision of flexible and appropriate instructional options for different target groups,where the teacher can receive inquiries and questions from students via mobile, and works to provide instructional materials and activities in different means adapted to the nature of those activities through voice, image and .That, In ML can be integrated the theoretical and practical aspects (Corbel & Valdes, 2009).

On the other hand there are some experiments that known by the researcher, which had used the Mobile learning, point out, for example, to experience Pringham University in the United Kingdom during the year 2005, in which the research team at the university used an experimental version of ML model for university students studying science for ten months , where to provide students by scientific articles and letters on subjects learning, as well as to facilitate communication and cooperation process between them and their teachers (Corlett&, etal., 2005).

And the experience of the United Arab Emirates in which were used the ML model in 2009 based on the employment of mobile technology that allows to the high technical colleges students dealing with instructional content by using all the technical advantages offered by mobile phones. where this technology enables the student to watch live demonstration of the lectures, and to discuss the teacher, and interact electronically with him from anywhere, as the system allows the student access to information sources in the college library and review the books and scientific journals.

### 3. Objectives and Questions

Which increases the importance of this study addressed to one of the topics that have not received adequate attention at the level of the Sudanese Researches, in spite of the great attention given by research and studies at the global level to the ML. This study seeks to detect services contained in MLT which could contribute to the development of Distance Learning courses (DLC) in Sudanese universities from the perspective of specialists of information and Instructional technology. As well as to determine the obstacles that could prevent the employment of MLT in the development of DLC in Sudanese universities. The current study addressed three main research questions as the following:

- (1) What are the services which included in MLT which could contribute to the development of DLC in Sudanese universities from the perspective of specialists of Information and Instructional technology?
- (2) What are the obstacles that a views from specialists of Information and Instructional technology in Sudanese universities, which could prevent the employment of MLT in the development of DLC?
- (3) Are there statistically significant differences in the estimation means of specialists of information and Instructional technology in Sudanese universities for extent to take advantage of the services provided by MLT that could contribute in the development of DLC?

### 4. Methodology

Descriptive analytical method was adopted in the current study in order to response the study questions.

#### 4.1 Population and Sample

The study population consisted of specialists of information and Instructional technology in Sudanese universities of (71), those who teach the information and Instructional technology courses during the year 12/2013, was chosen as a random sample numbered (46) respondents representing 64.8% from 15 Universities in different regions in Sudan, table (1) :

**Table 1: Shows the Distribution of Respondents According to Universities**

University	Number		Total
	Instructional Technology	Information Technology	
Khartoum	3	3	6
Omdurman Islamic	1	2	3
Bahry	1	1	2
Al zaeemAzhari	2	2	4
Elnieen	2	4	6
Al Jazeera	2	3	5
Sennar	1	1	2
Kordofan	2	1	3
Red Sea	-	1	1
Kassala	1	2	3
Shandi	-	2	2
Nile Valley	2	2	4
Dongola	1	1	2
Nyala	1	1	2
Alfasher	1	-	1
Net total	20	26	46

## 4.2 Procedure for Data Collection

To achieve the objectives and answer of the study questions, a questionnaire was designed to gather data. For establishing the content validity of the questionnaire, it was given to experienced professors. With the help of them, the coverage of the content was checked, on the basis of their suggestions and modifications were made in the questionnaire in the construction of items.

Then the questionnaire composed in its final form has become of (30) items distributed into two domains at (15) items per each domain. To ensure validity and reliability coefficient, the questionnaire was distributed through pilot sample, it has been found that have a suitable reliability and validity coefficient, making it for a valid application. The researcher then distributed the questionnaire by himself to the different universities, In order to ensure it is filling from the sample.

## 5. Analysis and Discussion of Results

Data analysis and discussions of results based on the study questions are provided.

**Table 2: Shows the Results of Analysis on First Research Question**

No.	Item	Disagree	Undecided	Agree	Mean	Sd.	t -value	Sig.
1	Enhance academic performance.		16.0	84.0	2.840	0.374	37.951	Significant
2	Provide safe protection for content.	-	12.0	88.0	2.880	0.332	43.418	Significant
3	Enable collaborative learning in an interactive way.	8.0	28.0	64.0	2.560	0.651	19.673	Significant
4	Promote student interaction with peers.	20.0	39.0	41.0	2.200	0.764	14.402	Significant
5	Development of thinking and problem-solving method.		32.0	68.0	2.680	0.476	28.146	Significant
6	Provide sufficient opportunity for the learner to interact with course content.	4.0	32.0	64.0	2.600	0.577	22.517	Significant
7	The provision of modern information bases for each learner.	4.0	28.0	68.0	2.640	0.569	23.214	Significant
8	Making university practice based on the needs of the students' learning.	8.0	20.0	72.0	2.640	0.638	20.699	Significant
9	Continuous updating of the content with everything that is new.	60.0	16.0	24.0	1.640	0.860	9.532	Significant
10	Attention to immediacy feedback.	16.0	12.0	72.0	2.560	0.768	16.664	Significant
11	Access to the content scheduled at anytime, anywhere.	16.0	32.0	52.0	2.360	0.757	15.584	Significant
12	Access to the available content without to connect with Internet.	28.0	24.0	48.0	2.200	0.866	12.702	Significant
13	Fill the vacuum student's time in whatever is useful.	32.0	36.0	32.0	2.000	0.817	12.247	Significant
14	Edit the scientific content and display it in a suitable time.	16.0	48.0	36.0	2.200	0.707	15.556	Significant
15	absorb and understand the scheduled topics easily	24.0	32.0	44.0	2.200	0.817	13.472	Significant

\*Neutral result

\*\*Disagreed result

On the basis of the results given on Table 2 the sample responses, were statistically significant where the t-table value read (0.685) which is less than the t- value calculated, which indicates the presence of statistical significance, that means the approval of specialists of information and Instructional technology on the items that relating to the first question, where the arithmetic mean of these items was been between (2.200 to 2.880) and standard deviation between (0.332 to 0.866) exception of items 9, 13. Item (9), was arithmetic mean (1.640), thus the result is to be disagreed.

Maybe this explains on the basis; that the continuous updating of the content is not in itself a service provided by MLT as much as a practice carried out by the university concerned in the light of its plans. Item (13), which was neutral result, it seems that there is a neutrality in the viewpoint of the respondents about what it can be ML devices contribute to fill the vacuum students time in whatever is useful, as the time spent by the learner in the use of learning mobile technique, perhaps depends to a large extent on his ability to access information and benefit from them to support the learning process.

**Table 3 Shows the Results of Analysis on First Research Question**

No.	Item	Disagree	Undecided	Agree	Mean	Sd.	t-value	Sig.
1	Some believing that the delivery of information by traditional methods is better than the use of mobile learning.	32.0	16.0	52.0	2.200	0.913	12.050	Significant
2	There is no clear plan for the usage of ML by the competent authorities (Ministry).	-	20.0	80.0	2.800	0.408	34.293	Significant
3	The small size of the screen, which reduces the amount of information displayed.	4.0	20.0	76.0	2.720	0.542	25.111	Significant
4	Lack of training for supervisors to use and employ the mobile learning.	48.0	28.0	24.0	1.760	0.831	10.594	Significant
5	MLT the establishment of an infrastructure from networks and devices.	32.0	28.0	40.0	2.080	0.862	12.063	Significant
6	Repeated Telecommunication from outside the instructional and learning process framework.	4.0	36.0	60.0	2.560	0.583	21.952	Significant
7	Limited for storage capacity of ML devices.	12.0	28.0	60.0	2.480	0.714	17.363	Significant
8	Penetrations of wireless networks from time to time.	20.0	36.0	44.0	2.240	0.779	14.379	Significant
9	Financial and technical cost.	16.0	16.0	68.0	2.520	0.770	16.358	Significant
10	The digital divide between students who will use ML devices.		24.0	76.0	2.760	0.436	31.659	Significant
11	The need for continuous charging for phones used in mobile learning.	5.0	35.0	60.0	2.550	0.597	27.014	Significant
12	Unwillingness by supervisors and students to the practice of mobile learning.	5.0	10.0	85.0	2.800	0.516	34.293	Significant
13	The response weak from some teachers courses.	5.0	17.5	77.5	2.725	0.554	31.102	Significant
14	Fluctuating market purchase and sale of ML devices.	15.0	42.5	42.5	2.275	0.716	20.105	Significant
15	Compatibility and communication limited between the mobile devices used.	7.5	27.5	65.0	2.575	0.636	25.607	Significant

\*Disagreed result

The table (3) shows that: There (were statistically significant, where the t-table value (0.685) which is less than the t- value calculated, signifying approval of the specialists of information and Instructional technology on all items that relating to the second question, where the arithmetic mean of these items was been between (2.080 to 2.800) and a standard deviation between (0.408 to 0.913).

Exception of item 4, which came its result disagreed; this result of this item perhaps reflect that the training on the use of ML devices may no longer be a stumbling block in front of the MLT activation in distance learning, as the use of these devices become commonplace and familiar among students, especially after the spread and the wide used of these devices.

Through these result, it is clear that there are obstacles that would prevent the employment of MLT in the development of DL in Sudanese universities. The presence of obstacles in any of the Sudanese university environments that adopt DL may seem a matter of normal as long as it does not exist any environment does not suffer from technical or material or instructional difficulties that prevent the employment of MLT in the development of DL, but the knowing of these obstacles will help to develop plans for the future and then access the optimized application for MLT in DL system.

**Table 4: Shows the Estimates Averages of the Specialists of Information and Instructional Technology**

Sample	No.	Mean	Sd.	t-value	Df.	Sig. level
Specialists of instructional technology	20	143.30	17.19	0.381	44	0.704
Specialists of information technology	20	145.13	17.07			

\*At the level of ( 0.05)

Presented in table (4) the result that relates to the answer the third question: there were no statistically significant differences between the respondent's responses from specialists of information and instructional technology; concerning the extent of benefit from the services provided by the MLT that could contribute to the development of DL. However, the specialists of information technology were more positive in their view, compared to the specialists of instructional technology.

This can be explained on the basis of what the specialist of information technology have from knowledge of mobile phones technique to the extent that allows for benefit from them and used in education, at a time when that usage has not reached the integration stage where becomes an integral part of the instruction practice in the Sudanese universities that adopt distance learning.

## 6. Conclusion and Recommendation

Bases on the findings above, it can be concluded that the MLT, because of its properties; can enhance the academic performance of learners in DL programs, and support the process of thinking they have, and development of the process of getting the content scheduled at anytime, anywhere, and enable them to put their questions in collaborative learning framework and the consequent of storage for content even instant immediacy feedback. As well as what can be provided from renewable information base for each student through interaction with information network or access to the available content without the need to connect to the Internet. Thus, it can be available for each student in a DL program, through MLT a clear idea of what he needs of the information which relevant to the course content and how to access and review it. Depend on the findings, it is recommended that initiate activation of MLT in the Sudanese universities and integrated into the DL systems according to a systematic and deliberate plan. Awareness of the relevant parties for the role of MLT and associated sophisticated devices in the teaching of DL and promotion of instructional and learning practice. Coordination between the Sudanese universities and communication companies regarding the composition of special systems allow spreading the DL content via mobile phone and management content by teachers.

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