Challenges of Implementing Mobile Learning in Distance Learning in Tanzania

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Abstract: *The aim of this research was to explore challenges of Implementing Mobile Learning (M-learning) in Distance Learning (DL). A sample of 450 students were interviewed by using both questionnaire and face- to-face interview .Results of this study indicate that, the biggest advantage of M-learning technology- when used, is that it can be used anywhere, anytime and its usage is easy access to a larger number of distance learners. Though challenges are there when implementing M-learning in DL, it is therefore concluded that students do enjoy the technology and once improved will facilitate the entire distance education by enhancing ways of communication among distance learners and lecturers and ways of delivering lectures.*

Keywords: Mobile learning, distance learning, e-learning, Tanzania

INTRODUCTION

Tanzania is a huge country composed of the Mainland with an area of 943,000 square Kilometres, and Zanzibar, (the islands of Unguja and Pemba) with approximately 2,000 square Kilometres. It has a total population of about 40 million comprising more than 120 ethnic groups with diverse cultures and notable income differentials. Economically, Tanzania is one of the poorest nations in Africa with a national GDP of US$ 23.87 billion (URT, 2011). It is a country in which 40% of the population is living beneath the official poverty line. As poverty increases, there is an increasing number of people who cannot access education especially tertiary and higher education.

Educational access and equity as well as the prevailing level of poverty necessitate the use of various education delivery approaches to enable all citizens to benefit from this public good (Sangai, 2004, Komba, 2009).

In traditional learning-teaching system, the learner has to be on-campus, to register as a full-time student and to attend face-to-face lectures and seminars. Communication between the teacher and the student is direct; this facilitates immediate exchange of messages and the resolution of learning problems (Komba, 2009). This approach limits education to many learners who are separated, by time and space, from those who are teaching.

Distance learning creates chances for many scholars to pursue their studies without being physically at colleges. The California Distance Learning Project (CDLP, 2011) defined distance learning (DL) as an instructional delivery system that

connects learners with educational resources. DL provides educational access to learners not enrolled in educational institutions and can augment the learning opportunities of current students. As a breakaway from traditional learning-teaching system, distance education relates to a methodology of teaching in the absence of a direct interaction between teacher and the student.

Irrespective of the medium or channels used in delivery, one of the greatest benefits of distance education is on its individualized approach. Whether students are accessing the inputs of knowledge by means of post or online process; the connection is developed between students and the course materials. This accessibility gives students better freedom to deal with their study material.

In case, learners are separated from mainstream education because of distance, time and other relevant reasons, they can fall back upon distance education on merit of its accessibility. This aspect of accessibility helps learners to continue education despite being professionally employed.

Learners need not travel across a new region or country for availing of the benefits of a course. They can access it by means of online method. Bijeesh (2013) commented that, this- not only saves time, but also cuts down financial expense. Moreover, most courses offered as part of distance learning method are cheaper than their regular counterpart

In spite of the absence of interaction between the teacher and student, in distance education, learning is accessed by channels other than conventional class room mode. Postal delivery happens to be the earliest channel of traditional DL. With the gradual development of web based technology, online technology has been evolving as one of the important channels of distance learning. As far as the delivery of inputs of knowledge is concerned, interaction between teacher & the taught can also be established by means of technologies such as instructional video, or web conferencing etc. All these technologies can be available when mobile learning is used as mode of delivering of education.

Much more needs to be done to help sustain the distance learners who are likely to feel isolated and alienated because of a lack of interaction and communication with fellow learners, tutors, and the university as compared to those in traditional universities (Dzakiria, 2005). In trying to bridge the transactional distances faced by the learners, it was noted that the university needs to provide a higher level of support to the learners more regularly and unobtrusively and to engage them psychologically by motivating and reminding them to keep pace with course schedules and requirements, as well as to help them develop self-regulation skills (Crawford, 2008). This can only been done when implementing M-learning in DL in all Universities or Institutions which offer distance education.

The ICT Policy of Tanzania for basic education (URT, 2007), aims at using ICT to improve distance learning, as well as to enhance the quality of the learning

experience itself. Other objectives are to expand and improve adult education, lifelong learning and literacy programme, notably for retraining and re-skilling the work force. The study was therefore, carried out to explore the challenges of implementing Mobile Learning in distance learning especially in Tanzania.

MOBILE LEARNING CONCEPTS

Many distance teaching as well as residential institutions have already started to experiment with mobile learning to enhance learning environments (Richter, 2010). Mobile learning is ñany sort of learning that happens when the learner is not at a fixed, predetermined location or learning that happens when the learner takes advantage of learning opportunities offered by mobile technologiesò (Oô Malley, Vavoula, Glew, Tailor, 2003)

Yousuf (2007) defines mobile learning as the provision of education and training on mobile devices. One among the characteristics of mobile learning is that it uses devices which citizens are used to carry everywhere with them, which they regard as friendly and personal devices, which are cheap and easy to use, which they use constantly in all walks of life and in a variety of different settings, except education. Netbooks, iPads, cell phones, iPods, e-readers and even Personal Digital Assistants (PDAs) are increasingly becoming the tools of choice for today's educators.

Mobile learning technologies offer teachers and students a more flexible approach to learning. Computer labs are great, but ñdo your students use technology in the classroom, in the school garden, in the study hall, in the gym, and on field trips? With mobile learning devices, you can do all these, and moreò (Wylie, 2012).

Mobile learning became wildly popular for a few years, and then quietly fades away (Clark, 2007 in Ismail, 2010). Nowadays, with the use of mobile learning, learners are able to learn anything, at any place and any time they needed the knowledge. Mobile learning on the other perspective as defined by (Kaplan-Leiserson, 2005) is ñthe new possibilities that are available for people given the mass deployment of devices that everyone now has their hands and the new connectivity that is comingò. While (Traxler, 2005) defines it as ñany educational provision where the sole or dominant technologies are handheld or palmtop devicesò, however (Sharples, 2005) took a different approach by describing learning ñas a process of coming to know, by which learners in cooperation with their peers and teachers, construct transiently stable interpretations of their world.ò

Mobile learning can be defined as an access to course content and the related learning activity by means of mobile devices. Or rather the type of learning in the course of which an online Course Learning Management system can be accessed by means of a networked mobile communication devices (György, 2013). This sort of use is provided by smart phones, and tablet PCs. Such a smart phone is Samsung Galaxy Tab touch screen device with Android Browser, which makes it possible to download optional web content and provides full scale multimedia.

EVOLUTION OF MOBILE LEARNING

The introduction of technology has promised increased and enhanced communication and interaction for distance and online learners. Regardless of the opportunities, there is limited evidence to support that this in fact occurs in practice. Indeed, some recent studies (Lonn & Teasley, 2009; McKeogh & Fox, 2009) suggest that most lecturers make little use of the interactive features of many ICT tools. There is also some evidence that although some tools such as lecture recordings are widely utilised, the majority of lecturers make no changes to their curriculum practices to integrate these technologies (Gosper et al., 2008; Preston et al, 2010). Indeed, (Conole, 2007; 2008) suggests that there is a gap between rhetoric and policy in relation to the use of M-learning for teaching and learning.

Distance students are recognised for their busy lives and their preference for anywhere, anytime learning and much is also made of studentsô ownership and use of mobile technology and its potential to create and support mobile learning through active and engaged learning activities and making more effective use of situated and contextual learning environments (Ally, 2009). Nevertheless, to date the majority of higher education institutions in Tanzania appear to have largely ignored this opportunity to encourage and support mobile learning on an institutional scale. Adding to the opportunities for learners to experience learning with a range of technologies, the adoption of social networking tools such as *Facebook, Twitter, Whatsapp* and SMS also continues to grow apace. Despite the opportunities offered by such tools, current research indicates that much of the focus of studentsô use of tools such as *Facebook* is social.

In parts of Southern Africa (Traxler, 2009) and East Africa including Tanzania for example, the term mobile learning is recognized but it is grafted onto a tradition of open and distance learning (ODL) and onto different pedagogic traditions, ones that have occasionally been called óinstructiveô and have concentrated on didactic approaches, not on discursive ones. Mobile learning in these parts of the world is a reaction to different challenges and limitations, usually those of infrastructure, poverty, distance, or scarcity issues of access to education.

Mobile learning has always been automatically taken as mobile e-learning and its history and development have to be understood as both continuation of conventional e-learning and also a reaction to this convectional e-learning and to its perceived inadequacies and limitations (Traxler, 2009).

Mobile and wireless technologies,- including handheld computers, PDAs, camera-phones, smart phones, graphing calculators, personal response systems (PRSs), games consoles, and personal media players are becoming ubiquitous in most parts of the world and have led to the development of mobile learning as a distinctive but ill-defined entity (Cobcrift, 2006 and Naismith, et al., 2004, in Traxler, 2009).

ñWherever one looks, evidence of mobile penetration is irrefutable: cell phones, PDAs, MP3 players, portable game devices, handhelds, tablets, and laptops abound.

No demographic is immune from this phenomenon. From toddlers to seniors, people are increasingly connected and are digitally communicating with each other in ways that would have been impossible only a few years agoò (Ellen, 2005 in Osang et al, 2013).

Recently, many researchers have focused on m-Learning and its environment, such as usersô acceptance of m-Learning (Phuangthong & Malisawan, 2005; Liu, 2009 in Osang et al 2013), setting the environment for m-Learning (Chao & Chen, 2009; Brown et al., 2006; Liu, 2008 in Osang et al 2013), and the application of m-Learning in developed countries.

Similarly, several researches have been carried out in developing countries. In Saudi Arabia, the results of the survey conducted at King Saud University as reported by Chanchary (2010 in Osang et al 2013), the author attempted to determine how the mobile technology can be utilized to improve studentôs retention at bachelor degree. The results indicated that the introduction of mobile teaching and learning can enhance the teaching and learning situation in that country.

The first generation of truly portable information has been integrated with many functions in small, portable electronic devices (Peters, 2007). Recent innovations in programme applications and social software using Web 2.0 technologies (e.g., blogs, wikis, Twitter, YouTube) or social networking sites (such as Facebook and MySpace) have made mobile devices more dynamic and pervasive and also promise more educational potential (Park, 2011).

However, it has been widely recognized that mobile learning is not just about the use of portable devices but also about learning across contexts (Walker, 2006 in Park, 2011). Winter (2006 in Park, 2011) conceptualises the nature of mobile learning and addresses it as ñmediated learning through mobile technologyò (p. 9). Pea and Maldonado (2006) use the term *wireless interactive learning devices* or WILD, an acronym created at SRI Internationalôs Center for Technology in Learning, to define technology that made it possible for learners to work at unique activities in ways that were previously impossible.

Peters (2007) viewed mobile learning as a useful component of the flexible learning model. (Brown 2005, p. 299) summarizes mobile learning as ñan extension of e-learningò. Peters, (2007, p. 15) also stated that it was a subset of e-learning, a step toward making the educational process ñjust in time, just enough and just for meò. Finally (Pea and Maldonado, 2006, p. 437) stated that mobile learning incorporates ñtransformative innovations for learning futuresò.

Although most of the developing countries are still in the first phase or perhaps in the research and development phase in implementing this type of learning environment, Kyun Baek and Uk Cheong (2008) as well as Barker, Krull, Mallinson and Mahamad (2010) as reported by (Osang et al, 2013) had proved that developing countries will soon catch up with this new learning paradigm. This shows that this

new learning paradigm will evolve mobile devices with the rapid usage and ownership among the users.

OBJECTIVE OF THE STUDY

The main objective of the study was to explore the challenges of implementing mobile learning in distance learning- especially in Tanzania. Specific objectives were as follows:-

(i) To explore the advantages of implementing mobile learning in DL;
(ii) Critically discus challenges of implementing mobile learning in DL;
(iii) To explore Students preferences for implementing mobile learning in DL;
(iv) To examine the extent to which distance learners are used to mobile learning

RESEARCH QUESTIONS

(i) What are the advantages of implementing mobile learning in DL?
(ii) What are the challenges of implementing mobile learning in DL?
(iii) What are the studentsô preferences for implementing mobile learning in DL?
(iv) To which extent distance learners use mobile learning?

RESEARCH METHODOLOGY

The study is a descriptive research that adopted survey research design. Questionnaires and interviews were used for data collection. Researcher developed a questionnaire on the basis of literature. Instruments were reviewed twice, one by a panel of experts in educational setting for determining its face validity, and second administered on the same kinds of respondent with a small number of sample for determining the internal consistency of the instruments.

DATA COLLECTION AND PROCEDURE

The researcher collected data from the respondents through email and direct from the interview after the distribution of questionnaires to the five educational institutions and scoring was done after the collection of data. Five point rating scale was used to record score of all positive statements ranged from 5-1 for different response categories. Strongly agree (SA), Agree (A), Undecided (U), Disagree (DA) and Strongly Disagree (SDA). The data was analyzed in terms of percentages.

The questionnaire was then administered to the five educational institutions that provide distance learning (DL) which included Moshi University College of Cooperative and Business Studies (MUCCoBS), the Institute of Adult Education (IAE), the Southern African Extension Unit (SAEU), The Open University of Tanzania (OUT) and University of Dar es Salaam (UDSM). In each Institution the questionnaire was sent to 100 students. Therefore, 500 Distance Learning students were considered as sample of study. Out of 500 students 450 students responded- which is 90%.

FINDINGS

Apart from the main objective of the study, the researcher also interviewed students to see their preferences on implementation of mobile learning in DL. The findings drawn out from the data analysis are as shown in Table 1.

Table 1: Opinions about the advantages of implementing M-learning in DL

Advantages	Response	Level of Agreement				
		SA	A	U	DA	SDA
Low cost of study	N	243	189	0	18	0
	%	(54)	(42)	(0)	(4)	(0)
Easy contact with the lecturer/teacher	N	270	135	9	9	27
	%	(60)	(30)	(2)	(2)	(6)
Feedback from lecturers or other institution staff	N	135	225	45	27	18
	%	(30)	(50)	(10)	(6)	(4)
Student support services	N	360	45	27	0	18
	%	(80)	(10)	(6)	(0)	(4)
M-learning provides new opportunities in DL	N	135	180	90	18	27
	%	(30)	(40)	(20)	(4)	(6)
M-learning is available anytime, anywhere	N	315	90	18	18	9
	%	(70)	(20)	(4)	(4)	(2)
M-learning is affordable for DL	N	225	135	27	45	18
	%	(50)	(30)	(6)	(10)	(4)

Results in **Table 1** indicate that, the majority of the respondents (96%) opined in favour of the statement that once m-learning is implemented in DL, students benefit from the low cost of the study compared to the campus students and few (4%) disagree with the said statement.

A significant majority (90%) of the respondents agreed that students contact with their lecturers was made easy. The majority of the respondents (80%) also agreed that getting feedback from either lecturers or other staff is so easy once m-learning is implemented in DL.

Similarly, a sufficient number of respondents (90%) supported the statement that students get support services from their lecturers such as providing tutors, academic planners and schedulers, and technical assistance.
A significant majority (70%) of the respondents agreed that mobile learning provides new opportunities of Distance Learning. Sufficient majority of respondents (90%) agreed that mobile learning being flexible, therefore is available anytime and anywhere.

M-learning was also said to be affordable for distance learners by 80% of the respondents and negated by 14% of the respondents.

It is evident from table 2 that the majority of the respondents (86% agreed on the statement that lack of awareness is among the challenges which students as well as lecturers do face. 90% respondents reported that, having a mobile device with the capability of accessing M-learning services is some how cost full.

Table 2: Challenges of implementing M-learning in DL

Challenges	Response	Level of Agreement				
		SA	A	U	DA	SDA
Lack of awareness of the technology	N %	198 (44)	189 (42)	18 (4)	18 (4)	27 (6)
High cost of Mobile phone of such capability	N %	180 (40)	225 (50)	18 (4)	9 (2)	9 (2)
Unreliable internet connectivity	N %	162 (36)	180 (40)	63 (14)	27 (6)	18 (4)
Devices malfunction	N %	90 (20)	315 (70)	0 (0)	18 (4)	27 (6)
Technical difficulties	N %	180 (40)	162 (36)	18 (4)	63 (14)	27 (6)

A significant majority (76%) of the respondents agreed that unreliable internet connectivity from the ISP is a great challenge they do face. Sufficient majority of the respondents (90%) agreed that sometimes they meet a challenge due to device malfunction.

Similarly, a sufficient majority of the respondents (76%) supported the statement that they lack technical skills so once the device fails to work properly they can not troubleshoot where the problem is.

Table 3: Students preferences for Mobile Learning in DL-450 students

Area of Preferences	Response	Level of Agreement				
		SA	A	U	DA	SDA
Feedback about assignments	N %	66 (55)	42 (35)	3 (2.5)	6 (5)	3 (2.5)
Information regarding assignment submission	N %	42 (35)	72 (60)	3 (2.5)	3 (2.5)	0 (0)
Schedule of lectures and tests/examinations	N %	48 (40)	54 (45)	6 (5)	9 (7.5)	3 (2.5)
Results from tutors	N %	78 (65)	36 (30)	3 (2.5)	3 (2.5)	0 (0)
Results from examination offices	N %	72 (60)	36 (30)	3 (2.5)	6 (5)	3 (2.5)

It is obvious from table 3 that a sufficient majority of the respondents (90%) showed their preference for mobile learning to be utilized for receiving feedback about assignments in distance learning. A prominent majority of the respondents (95%) preferred mobile learning for obtaining information regarding assignment submission.

The majority of 85% respondents favoured their preference to use the mobile learning for receiving schedule of lectures and tests or examinations. A majority of

95% respondents conveyed their preference for receiving results from tutors through mobile devices. A prominent majority of 90% respondents declared their preferences about use of mobile devices for receiving their results from examination offices.

Table 4: The extent to which distance learners are used to mobile learning

Areas of usability	Response	Level of Agreement				
		Always	**Frequently**	**Occasionally**	**Seldom**	**Never**
SMS	**N**	243	189	0	18	0
	%	(54)	(42)	(0)	(4)	(0)
Voice Mail	**N**	270	135	9	9	27
	%	(60)	(30)	(2)	(2)	(6)
MP3	**N**	135	225	45	27	18
	%	(30)	(50)	(10)	(6)	(4)
MMS	**N**	95	45	45	135	135
	%	(20)	(10)	(10)	(30)	(30)
Recording	**N**	45	27	18	135	225
	%	(10)	(6)	(4)	(30)	(50)

It is evident from table 4 that majority of respondents (96%) were found used to SMS usage for handling their activities among distance learning. 90% respondents reported that were used to Voice mail usage also 80% indicated the MP3 usage of mobile learning among distance learners. There were 60% respondents that have not used MMS to gain any help within distance learning. There were 80% respondents that were not found used to recording utilities of mobile devices within distance learning.

DISCUSSION AND CONCLUSION

Nowadays, mobile learning has been employed in various fields including distance learning. Several advantages have been observed as shown in Table 1. Despite of the importance of using M-learning as a means of distance learning, both students and lecturers face various challenges on its use. As it can been seen in the findings, 86% of respondents declared that they lacked awareness on the technology embedded in their mobile devices (table 2). It is very possible to see a person who own mobile phone which have all capabilities of accessing anything concerning his/her studies but use it just for making call or texting SMS and nothing else. Apart from students, some of academic staff also face the same challenges on the technology. Most of non ICT academic staff they are not aware on how to use technology to deliver their courses for distance learners. For such case it is very hard for said person to implement M-learning in distance learning as reported by (Rodgers et al, 2013).

Another challenge is the cost of mobile devices which have features which allow to access academic services. According to (Osang et al, 2013), cost of mobile learning can be seen from different perspectives ranging from the cost of the technology (programmes used for the development of mobile based system) and the

infrastructure (devices used to run the mobile application). Also smart phones normally come with regular cost like that of the data plan. It is one thing for a student to have a smart phone and another for that student to be able to pay for enough time or unlimited data access. Device such as smart phone costs almost US $ 900 to $ 1500 which is impossible for most of Tanzanian Students to afford. Again, even if student owns such smart phone, the cost for accessing internet is also high.

Though most of mobile companies have different internet bundles which somebody can pay per day, week or months, affording to pay for the bundle which will assist students to access all academic services is not easy as evidenced in the findings of this study which show that almost 90% find it costful to have a mobile device which have relevant features.

Unreliable internet connection is another challenge which is reported in the findings where by 76% of respondents agreed. M-learning relies on the availability of the internet services. Since m-learning is available anywhere, anytime; one among the limitations of this mode of learning is unreliable internet connection. It needs stable and fast connection to communicate with lecturers, accessing course materials but also for the lecturers to post academic activities such as learning materials, timetable, assignments, and examinations. Once there is no any connection it is very hard for either students or lecturers to perform their duties. Unreliable internet connectivity has been cited by the work carried by Kenley (2010 in Rodgers et al, 2013) when discussing the Awareness and challenges of E-learning at Paro College of Education of Royal University of Bhutan in South Asia and another study by Ndume et al (2008 in Rodgers et al 2013) on the challenges of adoption of e-learning in Tanzania.

Despite these challenges, Mobile learning provides information on schedules of university, and other relevant information related to their studies. The order of their preferences regarding the use of mobile devices in distance learning on the bases of percentages was for receiving results from university offices, information about assignments submission, schedule of lectures, tests, examinations, results and other instructions from tutors, feedback on assignments and receiving examination results from the college (Table 3). In present study, majority of the respondents preferred the implementation of mobile learning in distance learning whereas Traxler and Riordan (2003, in Yousuf, 2007) also support the findings of the study. Mobile learning is more interactive, involves more contact, communication and collaboration with people (Vavoula, 2005, in Yousuf, 2007).

The increasing and ubiquitous use of mobile phones provides a viable avenue for initiating contact and implementing interventions proactively. For instance, Short Message Service (SMS) is highly cost-effective and very reliable method of communication. It is less expensive to send an SMS than to mail a reminder through regular postal mail, or even follow-up via a telephone call. Further, no costly machines are required (which is clearly the case in terms of owning a

personal computer). If that is the case, effectiveness of mobile learning as a means of distance learning, reduce the cost which most of the respondents (95%) were complaining (Table: 1). But also this complies to the majority of the respondents (80%) who agreed that m-learning is affordable in distance learning (Table: 3).
Besides SMS, distance learners can use mobile phones/ MP3 players to listen to their course lectures, and for storage and data transfer. New technologies especially mobile technologies are now challenging the traditional concept of Distance Education. Keeping in view the problems of distance learners enrolled in DL programme and covering these problem areas through mobile learning, distance learners convey the importance of mobile learning to play a more central and effective role in providing students with much needed information.

Having mobile phones and availability of internet only do not enable students to implement M-learning unless both devices and server work properly. Malfunctioning of both mobile devices and servers as well is another challenge of using mobile learning as reported in findings (Table 2).

Another challenge which was revealed in findings and supported by 76% of respondents is technical difficulties. Technical Challenges includes different screen sizes, products, use of supported format for example Mobile devices that only supports GIF format will incorrectly display any learning object created using other formats, troubleshooting support services should be always ready.

It is therefore concluded that, despite the challenges, the availability of phones with different capabilities, the familiarity of the educators and students with the use of phones applications such as web surfing, video applications, text messaging, high social networking activities are all positive pointers to the advantages of using m-learning as a means of distance learning. Both lecturers and students should count the challenges as an opportunity towards their carrier and the technology must be built in such a way that it combats these challenges to make the usability of mobile devices in learning process

References

Ally, M. (Ed.) (2009). *Mobile learning: Transforming the delivery of education and training.* Athabasca, Canada: Athabasca University Press [Online] available from < http://www.aupress.ca/index.php/books/120155> [April 29, 2014]

Ashleigh, D. (2005): *A study of successful implementation and management of educational technology I three New South Wales primary school* [Online] available from < http://dlibrary.acu.edu.au/digitaltheses/public/adt-acuvp71.25092005/02whole.pdf> [August 03, 2013]

Bijeesh, Nishatha A, (2013) Advantages and disadvantages of distance education [Online] available from < http://www.htcampus.com/article/advantages-disadvantages-distance-learning-612/ > [August 23, 2013]

Brown, T. H. (2004). The role of m-learning in the future of e-learning in Africa. In D. Murphy, R. Carr, J. Taylor & W. Tat-meng (Eds.), *Distance education and technology: Issues and practice* (pp. 197-216). Hong Kong: Open University of Hong Kong Press

Brown, T. H. (2005). Towards a model for m-learning in Africa. *International Journal of E-Learning, 4*(3), 299-315.

Conole, G. (2008). Listening to the learner voice: The ever changing landscape of technology use for language students. *ReCALL*, 20(2), 124-140. [Online] available from < http://dx.doi.org/10.1017/S0958344008000220> [April 29, 2014]

Crawford, C. M. (2008). *Belonging and identity: Creating and sustaining communities of learning within distance learning environments, while focusing upon making connections, creating communities of learning, and maintaining personal and professional identities*. Paper presented at the Fourth International Conference on Environmental, Cultural,Economic & Social Sustainability. 4ï 7 January 2008. Universiti Malaysia Terengganu.

Daniel, J (2000). At the End of Now-Global trends and Their Regional Impacts, In V Reddy & S Maujulika (Ed.), The World of Open and Distance Learning. New Delhi, India: Viva Books Pvt. Ltd., 4451- 461.

Driscoll, D. L. & Brizee, A. (2010) *Analyzing Your Primary Data* [Online] available from < http://owl.english.purdue.edu/owl/resource/559/09/> [August 03, 2013]

Dzakiria, H. (2005). The role of learning support in open and distance learning: Learnersô experiences and perspectives. *Turkish Online Journal of Distance Education (TOJDE).* Retrieved from http://tojde.anadolu.edu.tr/tojde18/articles/article4.htm

El-Hussein, M. O. M., & Cronje, J. C. (2010). Defining Mobile Learning in the Higher Education Landscape. Educational Technology & Society, 13 (3), 12ï 21 [Online] available from http://www.ifets.info/journals/13_3/3.pdf [August 10, 2013]

E-Republic, USA (2011), Mobile Learning, what it take, how to get there [Online] available from <http://shop.sprint.com/global/pdf/services_solutions/brief_education_cde_mobile_learning.pdf> [September 2, 2013]

Gosper, M., Green, D., McNeill, M., Phillips, R. A., Preston, G. & Woo, K. (2008). *Final report: The impact of web-based lecture technologies on current and future practices in learning and teaching*. Sydney: Australian Learning and Teaching Council. [Online] available from < http://www.olt.gov.au/system/files/> resources/grants_project_webbasedlecture_report_aug08.pdf> [April 29, 2014]

György, Molnár Dr (2013) New Learning Spaces? M-Learning's, in Particular the iPadôs Potentials in Education [Online] available from <http://dx.doi.org/10.3991/ijim.v7i1.2398 > [September 27, 2013]

Hosam, Farouk & El-Sofany (2013) Improving Educational Outcomes by Providing Educational Services through Mobile Technology [Online] available from http://dx.doi.org/10.3991/ijim.v7i1.2287 [October 11, 2013]

Kaplan-Leiserson, E. (2005), ñTrend: mobile reality (a table of two experts)ò, available at www.learningcircuits.org/2005/apr2005/0504_Trends.htm.

Ismail, Issham, Thenmolli Gunasegaran, P. P. Koh & Rozhan M.Idrus (2010) Satisfaction of Distance Learners towards Mobile Learning Malaysian Journal of Educational Technology Vol 10, Iss 2, 2010 [Online] available from <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1715281&download=yes> [September 25, 2013]

Lonn, S. & Teasley, S. (2009). Saving time or innovating practice: Investigating perceptions and uses of Learning Management Systems. *Computers & Education*, 53(3), 686-694 [Online] available from < http://dx.doi.org/10.1016/j.compedu.2009.04.008> [April 29, 2014]

McKeogh, K. & Fox, S. (2009). Academic staff in traditional universities: Motivators and

demotivators in the adoption of e-learning. In A. Szücs, A. Tait, M. Vidal & U. Bernath (Eds.).*Distance and e-learning in transition: Learning innovation, technology and social challenges*.London: Wiley-ISTE [Online] available from < http://au.wiley.com/WileyCDA/WileyTitle/productCd-1848211325.html> [April 29, 2014]

Preston, G., Phillips, R., Gosper, M., McNeill, M., Woo, K. & Green, D. (2010). Web-based lecturetechnologies: Highlighting the changing nature of teaching and learning. *Australasian Journalof Educational Technology*, 26(6), 717-728 [Online] available from < http://www.ascilite.org.au/ajet/ajet26/preston.html> [April 29, 2014]

OðMalley, C. Vavoula, G. Glew, J. P. & Tailor, J. (2003) Guidelines for learning/teaching/tutoring in mobile environment. Mobilearn project deliverable [Online] available from http://www.mobilearn.org/download/results/guideline.pdf[July 05, 2013]

Osang, Francis, Tsuma, Clive & Ngole, Jey (2013) prospects and challenges of mobile learning Implementation in Nigeria: case study national open University of Nigeria (noun) [Online] available from < http://ictforafrica.org/attachments/section/4/ict4africa2013_submission_50.pdf > [Ocober 03, 2013]

Park, Yeonjeong (2011) A Pedagogical Framework for Mobile Learning: Categorizing Educational Applications of Mobile Technologies into Four Types [Online] available from <http://www.irrodl.org/index.php/irrodl/article/view/791/1699> [October 05, 2013]

Pea, R., & Maldonado, H. (2006) WILD for learning: Interacting through new computing devices anytime, anywhere. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 427-441), Cambridge: Cambridge University Press.

Peters, K. (2007). M-Learning: Positioning educators for a mobile, connected future. *International Journal Of Research in Open and Distance Learning, 8*(2), 1-17.

Richter, Dr. Olaf Zawacki (2010) Mobile Learning: From single project status into the mainstream [Online] available from <http://www.eurodl.org/?article=357 > [September 24, 2012]

Robert Yu-Liang Ting, (2005) Mobile Learning: Current Trend and Future Challenges [Online] available from <http://mobile-learning-anupam-fahad.googlecode.com/svn/trunk/references/mobile_learning_current_trends_and%20future_challenges.pdf> [October 04, 2013]

Rodgers, Bhalalusesa, Lukwaro, Elia E. & Clemence, Marin (2013) challenges of using e-learning management systems faced by academic staff in distance based institutions from developing countries: Case study Open University, *Journal of The Open University Tanzania, Vol 14*. Pg 89-110 [Online] available from < http://www.out.ac.tz/images/huria%20journal%20vol%2014%20-%20final%202013.pdf > [October 3, 2013]

Sharples, M. (2005), Learning as conversation: Transforming education in the mobile age. Proceedings ñSeeing Understanding, Learning in the Mobile Ageò, Budapest, , April 28ï 30, 2005, pp. 147-152.

Traxler, John (2009) Evolution of mobile teaching and learning [Online] available from <http://books.google.co.tz/books?hl=en&lr=&id=Cz5SCEaHNAMC&oi=fnd&pg=PR9&dq=mobile+learning+evolution&ots=U32bSZk8Xu&sig=pNYRmU8A3YEKZLE82y4YsKdn9m4&redir_esc=y#v=onepage&q=mobile%20learning%20evolution&f=false> [August 05, 2013]

Traxler, J. (2005) Defining Mobile Learning, Proceedings IADIS International Conference Mobile Learning 2005, Malta, pp. 261-266

Uden, L. (2007). Activity Theory for Designing Mobile Learning. Journal of Mobile Learning and Organisation, 1 (1), 81-102

Vavoula, G & Sharples, M. (2009) Meeting the challenges in evaluating Mobile Learning: a 3-level evaluation framework. *International Journal of Mobile and Blended Learning, 1,2, 54-75*

Wylie, Jonathan (2012) Mobile Learning Technologies for 21st Century Classrooms [Online] available from <http://www.scholastic.com/browse/article.jsp?id=3754742> [July 24, 2013]

YOUSUF, Muhammad, Imran (2007) Effectiveness of mobile learning in distance education, Turkish Online Journal of Distance Education-TOJDE October 2007 ISSN 1302-6488 Volume: 8 Number: 4 Article 9 [Online] available from <http://tojde.anadolu.edu.tr/tojde28/pdf/article_9.pdf> [June 10, 2013]