Challenges and Benefits of Mobile learning Adoption in OTM Programme in Delta State Polytechnics

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Abstract

This study present the perceived challenges and benefits of adopting m-learning in Office Technology and Management programme in Delta State Polytechnics. The study employed descriptive survey design. Two research questions and two null hypotheses were formulated to guide the study. Population and sample comprised all the 55 lecturers and 210 HND II students. Data were collected through a ten-item structured questionnaire for each research question with a five point Likert rating scale. Mean and standard deviation was used to answer the research questions and t-test analysis to test the null hypotheses. The study found that more than 80% of both lecturers and students agree with all the benefits of adopting m-learning in OTM, despite the challenges in adopting and implementing m-learning. Hence, the study recommended, among others, that policy formulators should ensure that the challenges perceived in the study, among others, should be considered in the customization of OTM educational policies for m-learning environment in the country.

Keywords: M-learning, Adoption, OTM, Benefits, Challenges

1. Introduction

The globalization of the world through Information and Communication Technology (ICT) has brought about knowledge expansion among polytechnics in growing rapidity, scope and complexity. Also, ICT is having a revolutionary impact on educational methodology globally, that is why teachers are today finding out that the traditional methods of managing and transmitting knowledge and skills are inadequate to deal with the accelerating change. In order to achieve the highest quality standard in education, a new approach to teaching and learning must be fostered to initiate change, intensify and diversify programmes and build a foundation for continuity (Ikediugwu, 2008). The delivery of a learning, training or education programme by electronic means is known as Electronic Learning (e-learning) (Stockley, 2011). It is the application of network technologies to create, foster, deliver and facilitate learning anytime and anywhere. It could be a platform for Distance Learning when it is used solely for educational delivery. Furthermore, it could be a tool for enhancing the quality of education and complementing the traditional methods of education in what is known as Blended Learning. Because of the complexity of e-learning paradigm, its implementation in the developing world encounters a lot of hitches. These challenges range from technological, attitudinal, curriculum and pedagogy, institutional readiness, teachers/learners competence, maintenance to sustainability.

The advent of Mobile technologies; the 2nd and 3rd generation Global System for Mobile Communication (2G/3G GSM), General Packet Radio Service (GPRS), Wireless Application Protocol (WAP), Infrared Data Association (IrDA), Bluetooth, IEEE 802.11, Wi-Fi, WiMAX and so on, which together with its corresponding mobile devices, are being adopted in Africa at a rate that is among the highest globally (Brown, 2003). Mobile technology have the power to make learning even more widely available and accessible to learners across Africa, especially the vulnerable populations that could not benefit from e-learning projects due to lack of infrastructure and other factors. Mobile learning is the delivery of learning education or learning support on mobile phones, Personal Digital Assistants (PDAs) or tablets. Electronic learning has provided the ability for traditional learning to break out of the classroom setting and for students to learn at home.

Mobile learning has enhanced upon e-learning by taking it a step further and allowing students to learn virtually anywhere a mobile signal is available. This allows students to stay connected to the classroom while travelling during break or during any other free time one may have. New mobile technology such as handheld based devices is playing a major role in redefining how we receive information. The recent advances in mobile technology are changing the primary purpose of mobile devices from making or receiving calls to retrieving the latest information on any subject. Mobile learning is the point at which mobile computing and electronic learning intersect to produce anytime, anywhere learning experience (Leung and Chan, 2003). As defined by Litchfield, Dyson, Lawrence and Zmijewska (2007), m-learning is the facilitation of learning and access to educational materials for students using mobile devices via a wireless medium. Costabile, De Angeli, Lanzilotti, Ardito, Buono and Pederson (2008) also affirm that the combination of e learning and mobile computing is called m - learning. In these definitions, it can be observed that the availability of the appropriate mobile device, the access to the wireless network and the need to acquire knowledge is what culminates in the m-learning experience. M-learning which shares same benefits with E-learning affords the learner the flexibility of studying anywhere, any how and any time with the use of portable wireless technologies. Adesope, Olubunnmi and McCracken (2007) maintain that, 'it is facilitated by a convergence of Internet, wireless networks, mobile devices and e- learning'. The technology enables the learner take advantage of short breaks such as lunch times to seek out information. Examples of these devices are digital media players, smart phones and PDA (Personal Digital Assistant). The portability of these devices avails the learner the opportunity to utilize spare times for learning instead of having to wait or defer the desire to obtain relevant information till arrival at the nearest library or access to a computer. Koole (2006) regards the portability feature of the device as an enabler to the process of accessing information such that with m-learning, the information moves to the learner instead of the learner moving to the information. It also reduces the burden of having to carry a laptop. Mobile learning presents opportunity for lifelong learning which is beneficial for the incessant need in skill and competence development.

2. Statement of the Problem

The global geometrical growth of mobile phone subscriptions in recent years has sparked interest in how mobile phones in particular might enhance Open and Distance Learning (ODL) opportunities for the professional development of teachers, their support in delivering teaching in their pedagogical practices and administrative duties as well as the delivery of learning to the students. Mobile learning has evolved from testing stage to a new educational trend widely being used by countries such as Japan, Britain, USA and Denmark, among others. Teaching and learning with mobile technologies has been going on for two decades in Europe and the USA. Organizational training programmes increasingly use technology-based training methods such as online simulation, mobile learning, social networks and podcasts to complement traditional methods (Bell, Martin and Clark, 2004; McGuire and Gubbins, 2010; Patel, 2010). Furthermore, academic programmes commonly associated with e-learning careers include business, education and social sciences (Utulu and Ayodele, 2012). Similarly, according to Fisher (2005), the profession of training and development specialists in e-learning is one of the 20 fastest-growing professional jobs in the next ten years with an increase of over 20%. This is good for the purpose of professional development and combating unemployment in the country. Students may not have to be deep experts in every dimensions of m-learning-related training but having an operational understanding of m-learning fundamentals which underlie business activities globally, would help them better communicate to meet objectives of business.

In Nigeria, little is being said about mobile learning despite the level of penetration of mobile network to most of the rural areas in the country and the availability of phones. In fact, 58.5 per cent of Nigerians in the rural population now has access to mobile phones (Nigerian Bureau of Statistics, 2011) in (Umoru and Okeke 2012). In addition, there is need for a study that explores the level of readiness of open and distance learners who are spread all over the country and their educators on their views on mobile learning. The perspectives of the educators remain fundamental in the adoption, implementation, usage and sustenance of any technological innovation as it affects teaching and learning. The adoption of mobile learning is not the same in all countries due to the level of awareness of the technology, availability of infrastructure, the expertise in the new technology and the willingness of the users to implement and use the technology. Therefore, this research intends to investigate the benefits and challenges of the adoption of m-learning in Office Technology and Management (OTM) programme in Delta State Polytechnics, Nigeria.

3. Purpose of the Study

The main purpose of this study was to examine the perceived benefits and challenges of M-learning adoption and utilization in OTM programmes in Delta State Polytechnics, Nigeria. Specifically, the study sought to:

1. Examine the challenges involved in adopting m-learning in OTM programme in Delta State Polytechnics.
2. Determine the benefits of M-learning adoption in OTM programme in Delta State Polytechnics.

4. Research Questions

The following research questions were raised to guide the study:

1. Are there challenges in adopting m-learning in OTM programme in Delta State Polytechnics?
2. What are the benefits of adopting m-learning in OTM programme in Delta State Polytechnics?

5. Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

1. There is no significant difference between the mean responses of the lecturers and students on the challenges involved in adopting m-learning in OTM programme in Delta State Polytechnics.
2. There is no significant difference between the mean responses of the lecturers and students on the benefits of adopting m-learning in OTM programme in Delta State Polytechnics.

6. Methodology

The study adopted descriptive survey design which permitted the use of questionnaire to obtain relevant information from respondents to describe the existence conditions and other phenomena. According to Leary (2010) a survey uses questionnaire and interview to collect information about people attitudes, beliefs, feelings, behaviours and lifestyles. This design was found most appropriate for this study because the study sought information from the respondents relative to their attitudes, beliefs, feelings and behaviour The population for the study consisted 55 lecturers and 210 HND II students drawn from the 3 public polytechnics in Delta State. The whole population was used to elicit responses from the respondents. The data collection instrument was a ten-item structured questionnaire for each of the research questions and was analyzed by using mean and standard deviation while t-test was used to test the null hypotheses at 0.05 level of significance. A 5-point likert rating scale was used to elicit the rating responses of respondents as: strongly agreed (5), agreed (4), undecided (3), disagreed (2) and strongly disagreed (1). The respondents were expected to check the appropriate point on the scale to register the extent of their agreement with a particular item statement made in the questionnaire on the challenges and benefit of adopting m-learning in OTM programme in Delta State Polytechnics. The questionnaire was validated by three experts, one each in business education, ICT and measurement and evaluation from Delta State University, Abraka. Their contributions enhanced content validity of the instrument. A test-retest measurement technique was used to establish the reliability of the instrument. The questionnaire was administered by the researchers with the help of two research assistants after due orientation. The decision rule for accepting or rejecting, was to reject the null hypothesis if the calculated t-value was greater than the t-table value or otherwise, do not reject and accept.

7. Findings of the Study

This section is designed to present the data collected for ease of analysis and interpretation. Research question 1 and 2 were answered using mean and standard deviation while the null hypotheses were tested using t-test statistic.

7.1 Research Question 1

Are there challenges in adopting m-learning in OTM programme in Delta State Polytechnics?

Table 1: Respondents' Mean and Standard Deviation Distribution on the Challenges in Adopting M-Learning in OTM Programme in Delta State Polytechnics

S/N	Challenges of adopting M-Learning in OTM	Lecturers			Students		
		$\overline{X}$	STD	Remark	$\overline{X}$	STD	Remark
1	m-learning students face environmental disturbance	3.76	1.35	Agree	3.52	1.46	Agree
2	There is fragmentation in learning in m-learning	3.24	1.49	Agree	3.95	1.12	Agree
3	Connectivity and battery life span are common phenomena	3.98	1.28	Agree	4.08	1.20	Agree
4	Accessibility and cost barriers for end users are common	3.18	1.47	Agree	4.15	1.05	Agree
5	Frequent changes in device models and technologies functionality	3.42	1.40	Agree	2.97	1.44	Disagree
6	No restriction on learning time-table	3.55	1.44	Agree	3.73	1.36	Agree
7	Durability and obsolescence of the handheld devices	3.76	1.36	Agree	3.48	1.44	Agree
8	m-learning cannot sustain the concentration span of students for long	3.31	1.56	Agree	3.86	1.31	Agree
9	Information and interaction overload as a result of extensive use of the mobile devices	4.31	1.05	Agree	4.26	1.28	Agree
10	Subject of mobility in the content of mobile learning is a challenge	3.16	1.53	Agree	3.59	1.46	Agree

Keys: $\overline{X}$ = mean, STD = Standard Deviation

Table 1 shows that lecturers' perception on the challenges of adopting m-learning indicated that they were all in agreement with all the items with the mean ranging from 3.16 to 4.31, while students were in agreement with 9 items out of the 10 items, which implies that, there was no difference perception between the students and the lecturers of OTM programme in the polytechnics.

7.2 Research Question 2

What are the benefits of adopting m-learning in OTM programme in Delta State Polytechnics?

Table 2: Respondents' Mean and Standard Deviation Distribution on the Benefits of Adopting M-Learning in OTM Programme in Delta State Polytechnics

S/N	Benefits of Adopting M-Learning in OTM	Lecturers			Students		
		$\overline{X}$	STD	Remark	$\overline{X}$	STD	Remark
1	Students who receive lectures via m-learning obtain better grades than those who receive conventional lectures	2.89	1.50	Disagree	2.70	1.51	Disagree
2	Students are motivated, stimulated and excited using m-learning	3.51	1.50	Agree	3.61	1.41	Agree
3	m-learning has personalization and extended reach capabilities	3.51	1.57	Agree	3.81	1.27	Agree
4	m-learning provides an opportunity to enhance experiential learning	3.29	1.56	Agree	3.88	1.27	Agree
5	m-learning reduces the distance between teacher and students, thereby reducing students' pressure	3.33	1.60	Agree	3.81	1.35	Agree
6	m-learning establishes a bridge between the formal and informal learning spaces which affords learners the opportunity to interpret and apply what is learnt	3.22	1.42	Agree	3.32	1.51	Agree
7	m-learning provides an atmosphere that takes learning outside the classroom and even remote places	3.84	1.50	Agree	4.12	1.23	Agree
8	m-learning is learner-centred	4.07	1.32	Agree	3.99	1.41	Agree
9	Students can play back audio and video of interactions	3.58	1.63	Agree	4.04	1.53	Agree
10	m-learning provides relatively inexpensive opportunities as the cost of mobile devices are significantly less than PCs and laptops	1.67	1.00	Disagree	3.41	1.47	Agree

Table 2 shows that lecturers agreed with 8 items out of 10 items, while students agreed with 9 items out of 10 items on the benefits of adopting m-learning in OTM programme in the Polytechnics in Delta State, indicating a near unanimous responses between lecturers and students

7.3. Testing of Hypotheses

7.3.1. Hypothesis 1

There is no significant difference between the mean responses of the lecturers and students on the challenges involved in adopting m-learning in OTM programme in Delta State Polytechnics.

Table 3: Summary of T-Test Analysis on the Challenges involved in Adopting M-Learning in OTM Programme in Delta State Polytechnics

Respondents	Mean	STD	N	df	t-Cal.	t-Crit.	Remark
Students	3.76	1.31	210	263	0.86	1.96	Accepted
Lecturers	3.57	1.39	55				

Table 3 shows the summary of t-test analysis of hypothesis one. Because the calculated value of t (0.86) is less than the t-critical value (1.96), the null hypothesis one was accepted and upheld. This implies that there is no statistically significant difference between the mean responses of both students and the lecturers on the challenges of adopting m-learning in OTM programme in Delta State Polytechnics.

7.3.2. Hypothesis 2

There is no significant difference between the mean responses of the lecturers and students on the benefits of adopting m-learning in OTM programme in Delta State Polytechnics.

Table 4: Summary of t-test Analysis on the Benefits of Adopting M-Learning in OTM Programme in Delta State Polytechnics

Respondents	Mean	STD	N	df	t-Cal.	t-Crit.	Remark
Students	3.67	1.43	210	263	1.73	1.96	Accepted
lecturers	3.29	1.46	55				

Table 4 shows the summary of t-test analysis of hypothesis one. Because the calculated value of t (1.73) is less than the t-critical value (1.96), the null hypothesis one was accepted and upheld. This implies that there is no statistically significant difference between the mean responses of both students and the lecturers on the benefits of adopting m-learning in OTM programme in Delta State Polytechnics.

8. Discussion of Findings

The purpose of this paper was to present the findings regarding the perceived challenges and benefits of adopting m-learning in OTM programme in the polytechnics. It looked at both students and lecturers' perception to adopt and use m-learning in instructional process. Tables 1 and 2 presented the perceived challenges as well as the perceived benefits which will likely affect the successful adoption and sustenance of mobile learning in OTM programme. The greatest benefits to the students to adopt m-learning in OTM was their perception in its mobility feature of anywhere, anytime and m-learning provides an atmosphere that takes learning outside the classroom and even remote places. More than 80% of both lecturers and students agreed with all the benefits of mobile learning as listed in Research Question 2. This was in agreement with the opinion of Boyinbode and Akinyede (2008), which also perceived that mobile learning is the best option to simplify the delivery of course materials to where ever network exists. They further asserted that mobile learning is important to make up for the infrastructural deficits currently experienced and the conventional means of moving content by road in trucks different parts of Nigeria. Lecturers also believe that the poor learning environment will greatly affect the teaching and learning activities using mobile handheld devices. They also believe that lecturers' interest in m-learning is a crucial area to be taken into consideration in adopting m-learning. Other parameters as challenges were also listed in Research Question 1, of which 80% of both students and lecturers agreed to. Using the t-test analysis to check the significant difference between the mean responses of the respondents on the challenges and benefits of adopting m-learning in OTM programme, it was found that there was no significant difference in the perception of students and lecturers of OTM in the two null hypotheses formulated and tested at 0.05 level of significance. Therefore, the two null hypotheses were upheld.

The entire findings of this study agree with the opinion of Bruns (2006) who asserted that, the availability of phones with different capabilities, the familiarity of the lecturers and students with the use of phones applications such as web surfing, video applications, high social networking activities are all positive pointer to the readiness of the lecturers and students to accepting the new trend in education. Francis, Clive and Jey (2013) in their studies also asserted that, despite the challenges in adopting and implementing m-learning, lecturers and students see the adoption of m-learning as the new trend which will revolutionize education in Africa.

9. Conclusion

Mobile technology is becoming ubiquitous and it is vital that lecturers and students in higher learning institutions should indulge in this new way of teaching and learning. Whether or not mobile learning will be adopted and sustained by lecturers and students of OTM will greatly depend on how efficient and necessary they consider the services and features. For example, if lecturers could facilitate their courses while being at home or while travelling, it will make life easier for them. In the same vein, students currently travelling to their state capitals for information about their studies and facilitation will happily accept enjoying such facilitation from the comfort of their homes. In addition, the level of access to OTM which will be boosted by the introduction of mobile learning in the country cannot be imagined. Quality and functional access to OTM will be guaranteed especially in the rural communities which lack basic amenities. However, parameters such as learning environment, perception of the lecturers and students, motivation of the lecturers, security challenges and cost of bandwidth to support mobile learning in OTM, among others, should be considered.

10. Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. Policy formulators should ensure that the parameters mentioned, among others, are considered in the customization of educational policies for m-learning environment in OTM.
2. To effectively adopt mobile learning model in OTM, lecturers should deal with the issues, including the following: The cost of acquiring devices and networking equipment must be carefully considered. While students in OTM could easily own their cell phones and any other PDAs, the lecturers together with the school authority should ensure that networking equipment are provided while technical support is engaged on contractual basis if they cannot be engaged full time.
3. Slight modification to the existing OTM curriculum in Nigerian institutions is required, to expand career opportunities in m-learning for graduates. This will enable them use their business knowledge, project management skills and m-learning system to improve business process.
4. For mobile learning to succeed in OTM, lecturers should seek suitable applications that fit into the need of the students and map directly to the curriculum.
5. Both the lecturers, learners and those who may be involved in creating the content of what is to be learned in OTM must ensure that all requirements are understood and accepted by all who are to use mobile applications for teaching and learning.

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