



ASSESSMENT OF MOBILE LEARNING TECHNOLOGIES APPLICATION FOR BUSINESS EDUCATION INSTRUCTION IN COLLEGES OF EDUCATION IN DELTA STATE, NIGERIA

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Abstract

The study assessed mobile learning technologies application for business education instruction in colleges of education in Delta State, Nigeria using descriptive survey research design. Three research questions and three null hypotheses guided the study. The population for the study was 312, made up of 79 business education lecturers and 233 NCE III students of business education from the two colleges of education from Delta North. Purposive sampling and simple random sampling techniques were used. The entire 79 lecturers were used from the two colleges while 61 students were sampled from FCE (T) Asaba and 42 students from College of Education Agbor, making a total of 182. The instrument for data collection was a 50-item structured questionnaire. The instrument was face-validated by three experts using Cronbach Alpha. The reliability yielded a coefficient of 0.84. The data collected were analysed using frequency, mean and t-test statistics. The findings of the study showed that the extent of utilization of m-learning technologies is relatively low. In addition, the study identified 15 instructional benefits of the use of m-learning technologies and 20 challenges undermining effective utilization of m-learning technologies for teaching and learning business education subjects in colleges of education in Delta North. The result of hypotheses showed no significant differences in the mean ratings of the responses of business education lecturers and students on 40 out of the 50 items, whereas, there were significant differences on the remaining 10 items. The study among others recommended capacity building training for lecturers on m-learning skills for effective operation of m-learning devices for teaching, learning and research purposes.

Keywords: *Mobile learning, Business education, Colleges of education, Benefits, Challenges.*

Introduction

College of education is one of the higher level schools for advanced education following the completion of secondary education. It is an institution established by law to provide knowledge, skills and training to students for the production of teachers and skilled personnel who shall be enterprising and self-reliant (Federal Government of Nigeria, 2014). At college of education level in Nigerian education system, one of the vocational courses



where students can enrol and be equipped with saleable skills for self and paid job on graduation is business education.

Business education is a form of vocational education that is focused on equipping the recipients with saleable skills for productive teaching, paid employment and self-employment. According to Nwuzoh (2016), Business education as the type of education that gives individuals the needed skills and knowledge to succeed in either small, medium or large scale businesses. In the opinion of Ugwuogo (2013), business education is an aspect of vocational education that provides instruction and preparation for office occupations such as secretary, shorthand-typist or stenographer, bookkeeper, data processor, word processor, computer analyst and accountant. On the other hand, education about business provides knowledge and understanding of the economic, financial, marketing, accounting, management system and other branches of business endeavour. Some of the objectives of business education in Nigeria school system as highlighted by Aliyu (2013) include: provision of specialized instruction to prepare students for career in business, developing in students fundamental instruction to help them assume their economic roles as consumers, workers and citizens and equipping learners with background instruction to assist them in preparing for professional careers interest for advanced study.

The sustainable achievement of the objectives of business education in Nigeria education is obviously thwarted with the use of obsolete teaching materials and sluggish adoption of modern interactive technology devices for effective teaching and learning. Chaka and Govender (2014) argued that one of the ways of resuscitating the status of colleges of education and lifting the quality of their products is by improving the learning environment and providing access to modern learning resources such as the use of mobile learning (m-learning) technologies.

Mobile learning (m-learning) is a method of instructional delivery of educational training through the use of handheld mobile electronics irrespective of location and time. Hashemi, Azizinezhad, Najafi and Nesari (2011) described m-learning as the use of technological devices such as mobile phones, androids, smart phones and iPad to extend the reach of teaching and learning across multiple locations. In the opinion of Pamela (2011), m-learning technologies are handheld information technology devices or artifacts that encompass hardware (devices), software (interface and applications), and communication (network services). Ugwu (2012) stated that m-learning technologies could also be seen as any 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 the learning opportunities offered by mobile technologies. Amiaya and Ranor (2015) noted that the application of m-learning technologies creates, fosters, delivers and facilitates learning anytime and anywhere.

The instructional benefit of the use of m-learning technologies to teaching and learning is overwhelming. For instance, Valk, Rashid and Elder (2010) submitted that the use of m-learning such as mobile phones has to a great extent assisted to improve access to



educational resources and promote acquisition of new knowledge. In their own view, Gedik, Hanci-Karademirci, Kursun and Caglitay (2012) reported that m-learning provides significant learning prospects for students who regularly use mobile devices like personal digital assistance, android, smart phones among others. In addition, Ogbuju, Mbanusi, Chukwu and Onyesolu (2012) while assessing m-learning technologies framework for Nigerian students reported that improved m-learning technologies will enable students to access academic contents, submit assignments remotely, access resources in the library, and collaborate with each other via the system. With the apparent instructional advantages of m-learning technologies, the present rate of utilizing modern devices for learning in tertiary institutions in Nigeria and Delta State in particular cannot be equated with that of developed world where teaching and learning are made to be more effective, interactive and learner-centred through the use of m-learning technologies. The bulk of the teaching and learning of business education in Delta State as observed during the pre-field assessment by the researcher is characterised by gross use of traditional board and markers system of instructional delivery. Thus, the research deemed it necessary to assess m-learning technologies application for business education instruction in colleges of education in Delta State.

Purpose of the Study

The major purpose of this study was to assess m-learning technologies application for business education instruction in colleges of education in Delta North, Nigeria. Specifically, the study:

1. Examined the extent of utilization of m-learning technologies for instructional delivery in business education in colleges of education in Delta North.
2. Identified instructional benefits of the use of m-learning technologies for instructional delivery in business education in colleges of education in Delta North.
3. Identified the challenges undermining effective use of m-learning for instructional delivery in business education in colleges of education in Delta North.

Research Questions

The following research questions guided the study:

1. To what extent are m-learning technologies utilized for instructional delivery in business education in the study area?
2. What are the instructional benefits of the use of m-learning technologies for instructional delivery in business education in the study area?
3. What are the challenges undermining effective use of m-learning for instructional delivery in business education in the study area.

Hypotheses

H₀₁: There is no significant difference in the mean ratings of lecturers and students on the extent to which m-learning technologies are utilized for instructional delivery in business education in the study area.



- H₀₂:** There is no significant difference in the mean ratings of lecturers and students on the instructional benefits of the use of m-learning technologies for instructional delivery in business education in the study area.
- H₀₃:** There is no significant difference in the mean ratings of lecturers and students on the challenges undermining effective use of m-learning for instructional delivery in business education in the study area.

Method

The study was guided by three research questions and three null hypotheses. Descriptive survey research design was adopted for the study. Descriptive survey research design according to Check and Schutt (2012) is the collection of information from a sample of individuals through their responses to questions. The population for the study was 312 subjects, made up of all the 79 business education lecturers and 233 NCE III students of business education from the two colleges of education in Delta North. Purposive and simple random sampling techniques were used. The entire 79 lecturers were used for the study - 58 from FCE(T) Asaba and 21 from COE Agbor. Simple random sampling techniques was used to sample 61 students from FCE(T) Asaba, while 42 were sampled from COE Agbor making a total students population of 103. Total size is now 79 lecturers and 103 students which was 182.

The instrument for data collection for the study was a 50-item structured questionnaire titled: “Assessment of Mobile Learning Technologies Application Questionnaire (AMLTAQ). The questionnaire has three clusters in line with the three specific purposes of the study. Cluster A₁ was structured on a 4-point rating scale of Very High Extent (VHE); High Extent (HE); Low Extent (LE) and Very Low Extent (VLE) with corresponding values of 4, 3, 2, and 1 respectively. Clusters A₂ and A₃ were structured on a 4-point rating scale of Strongly Agree (SA); Agree (A); Disagree (D); and Strongly Disagree (SD) with corresponding values of 4, 3, 2, and 1. The instrument was face-validated by three experts. Cronbach Alpha reliability method was used to determine the reliability of the instrument which yielded a coefficient of 0.84. Data for the study were collected with the help of two research assistants. Out of the 182 copies of the questionnaire administered, 170 copies were completely filled and returned representing 93.4% return rate. The data collected were analysed using frequency and mean for answering the research questions while t-test statistics was used for testing the null hypotheses at 0.05 level of significance.

To answer the research questions, mean and standard deviation were employed. The cut-off point for the response option was obtained thus:

$$\frac{4+3+2+1}{44} \times 10 = 2.50 \text{ (Cut-off point)}$$

Based on the obtained cut-off point value, any item with mean value of 2.50 and above was interpreted as “High Extent or Agree” as the case may be while items with mean values less than 2.50 were interpreted as “Low Extent or Disagree” as the case may be. On the null hypotheses tested, the hypothesis of no significant difference was accepted for items whose p-values were greater than 0.05 level of significance, while hypothesis of no significant difference was rejected for items whose p-values were less than 0.05 level of significance.

Results

Research Question One

To what extent are m-learning technologies utilized for instructional delivery in business education in the study area?

H₀₁: There is no significant difference in the mean ratings of lecturers and students on the extent to which m-learning technologies are being utilized for instructional delivery in Business education in the study area.

The data for answering the first research question and testing the first hypothesis are presented in Table 1.

Table 1: Mean ratings and t-test statistics of the responses of Business Education Lecturers and Students on the Extent to which M-learning Technologies are being Utilized for Instructional Delivery in Business Education in the Study Area (n = 170).

SN	Extent of utilization of m-learning technologies for instructional delivery	\bar{X}_L	\bar{X}_S	\bar{X}_G	SD _G	p-value	Remarks	
							RQ	H ₀
1	The use m-learning technologies to search the internet for material for teaching and learning Business education	3.76	3.89	3.83	0.55	0.24	HE	NS
2	The use of m-learning technologies for Business education instructional delivery	2.35	2.41	2.38	0.77	0.21	LE	NS
3	The use of m-learning technologies for instructional planning Bus. education instruction	2.60	2.57	2.59	0.64	0.52	HE	NS
4	The use of m-learning technologies for setting assignment for business education students	2.23	2.36	2.30	0.85	0.62	LE	NS
5	The use m-learning technologies to assess students response	2.12	2.03	2.08	0.89	0.43	LE	NS
6	The use of m-learning technologies for distributing lecture notes and materials to the research of students	2.26	2.29	2.27	0.79	0.40	LE	NS
7	The use m-learning technologies to download learning packages for effective teaching and learning Business education	2.42	2.16	2.29	0.86	0.02	LE	S*
8	The use of m-learning technologies for recording students' scores	2.50	2.46	2.48	0.78	0.63	LE	NS



9	Forming learning group for information sharing using m-learning technologies	2.76	3.59	3.17	0.71	0.00	HE	S*
10	The use of m-learning technologies to disseminate information on performance of students.	2.44	2.37	2.40	0.62	0.52	LE	NS
11	The use of m-learning technologies for administering test and exam to Business education students	2.35	2.23	2.29	0.65	0.68	LE	NS
12	Use m-learning technologies for class management and control	2.00	1.95	1.98	0.81	0.32	LE	NS
13	The use of m-learning technologies for academic conferencing to complement teaching	3.35	2.97	3.16	0.65	0.01	HE	S*
14	The use of m-learning technologies to get feedback from students	2.40	2.43	2.42	0.79	0.55	LE	NS
15	The use m-learning technologies to assign class/home work to students	2.64	2.67	2.66	0.68	0.57	HE	NS

Note: \bar{X}_L = Mean of Lecturers; \bar{X}_S = Mean of Students; \bar{X}_G = Grand Mean; **HE** = High Extent; **LE** = Low Extent; **N** = Number of Respondents; **S*** = Significant; **NS** = Not Significant; Sig. at **0.05**.

The data presented in Table 1 shows that the grand mean ratings of the responses of respondents on 10 out of the 15 items range from 1.98 to 2.48 which are less than the cut-off point value of 2.50 on 4-point rating scale. This indicates that the 10 items of m-learning technologies are to a “low extent” utilized for instructional delivery in business education in colleges of education in Delta State. The grand mean ratings of the remaining five items (specifically items 1, 3, 9, 13 and 15) are 3.83, 2.59, 3.17, 3.16 and 2.66 respectively which are in each case greater than the cut-off point value of 2.50 on 4-point rating scale. This implies that the five items of m-learning technologies are to a “high extent” utilized for instructional delivery in business education in colleges of education in Delta State. The grand standard deviation of the 15 items range from 0.55 to 0.89 which implies that the responses of the respondents are close to one another and the mean.

The data on t-test statistics reveal that the p-values of 12 out of the 15 items range from 0.21 to 0.68 which are all greater than 0.05 level of significance. This indicates that there are no significant differences in the mean ratings of the responses of business education lecturers and students on the 12 items of extent of utilization of m-learning technologies for instructional delivery in Business education in the study area. Therefore, the null hypothesis of no significant difference is accepted on the 12 items. On the other hand, the p-values on the remaining three items (items 7, 9 and 13) are 0.02, 0.00 and 0.01 respectively which are in each case less than 0.05 level of significance. This indicates that there are significant differences in the mean ratings of the responses and business education lecturers and students on the remaining 3 items of extent of utilization of m-learning technologies for instructional delivery in business education. Thus, the null hypothesis of no significant difference is rejected on the three items in the table.



Research Question Two

What are the instructional benefits of the use of m-learning technologies for instructional delivery in Business education in the study area?

H0₂: There is no significant difference in the mean ratings of lecturers and students on the instructional benefits of the use of m-learning technologies for instructional delivery in Business education in the study area.

The data for answering research question two and testing hypothesis two are presented in Table 2.

Table 2: Mean ratings and t-test statistics of the responses of Business Education Lecturers and Students on Instructional Benefits of the Use of M-learning Technologies for Instructional Delivery in Business Education in the Study Area (n = 170).

SN	Instructional benefits of using m-learning technologies	\bar{X}_L	\bar{X}_S	\bar{X}_G	SD _G	p-value	Remarks	
							RQ	H0
1	M-learning has personalization and extended reach capabilities	3.70	3.72	3.71	0.65	0.16	A	NS
2	The use of m-learning reduces the distance between teacher and students, thereby reducing students' pressure	3.68	3.64	3.66	0.50	0.13	A	NS
3	The use of m-learning establishes a bridge between the formal and informal learning spaces for better application of acquired knowledge	3.61	3.65	3.63	0.51	0.29	A	NS
4	Students are motivated and stimulated using m-learning for instruction	3.62	3.61	3.61	0.54	0.77	A	NS
5	Students who receive lectures via m-learning obtain better grades than those who receive conventional lectures	3.61	3.59	3.60	0.54	0.59	A	NS
6	The use of m-learning provides an opportunity to enhance experiential learning	3.43	3.70	3.57	0.59	0.01	A	S*
7	The sue of m-learning technologies provide an atmosphere that takes learning outside the classroom and even remote places	3.40	3.43	3.41	0.79	0.55	A	NS
8	The use of m-learning technology is learner-centred.	3.45	3.37	3.41	0.70	0.84	A	NS
9	M-learning technologies make learning take place at any time and location	3.52	3.50	3.51	0.80	0.13	A	NS
10	M-learning provides relatively inexpensive opportunities as the cost of mobile devices are significantly less than PCs and laptops	3.57	3.20	3.39	0.71	0.02	A	S*
11	Students can play back audio and video of interactions for better understanding	3.41	3.38	3.40	0.72	0.09	A	NS
12	The use of m-learning technologies make research more easier	3.46	3.45	3.46	0.73	0.17	A	NS
13	The use of m-learning technologies makes the writing and submission of assignment easier for students than the use of biro and paper	3.41	3.48	3.45	0.66	0.23	A	NS
14	M-learning technologies enhance information sharing among students for academic excellence	3.37	3.23	3.30	0.74	0.10	A	NS
15	The use of m-learning technologies make learning more interactive and interesting	3.54	3.48	3.51	0.83	0.24	A	NS

Note: \bar{X}_L = Mean of Lecturers; \bar{X}_S = Mean of Students; \bar{X}_G = Grand Mean; A = Agreed; N = Number of Respondents; S* = Significant; NS = Not Significant; Sig. at **0.05**.



The data presented in Table 2 reveal that the grand mean ratings of the responses of the respondents on the 15 items range from 3.30 to 3.71 which are greater than the cut-off point value of 2.50 on 4-point rating scale. This indicates that the 15 identified items are instructional benefits of the use of m-learning technologies for instructional delivery in business education in colleges of education in Delta State. The grand standard deviation of the 15 items range from 0.55 to 0.89 which implies that the responses of the respondents are close to one another and the mean.

The data on t-test statistics reveal that the p-values of 13 out of the 15 items range from 0.09 to 0.84 which are all greater than 0.05 level of significance. This indicates that there are no significant differences in the mean ratings of the responses of business education lecturers and students on the 13 instructional benefits of the use of m-learning technologies for instructional delivery in business education. Consequently, the null hypothesis of no significant difference is accepted on the 13 items. The p-values on the remaining two items (items 6 and 10 are 0.01 and 0.02) respectively which are in each case less than 0.05 level of significance. This implies that there are significant differences in the mean ratings of the responses of business education lecturers and students on the two instructional benefits of the use of m-learning technologies for instructional delivery in business education in the study area. Therefore, the null hypothesis of no significant difference is rejected on the two items.

Research Question Three

What are the challenges undermining effective use of m-learning for instructional delivery in business education in the study area.

H₀₃: There is no significant difference in the mean ratings of lecturers and students on the challenges undermining effective use of m-learning for instructional delivery in Business education in the study area.

The data for answering the third research question and testing the third hypothesis are presented in Table 3.

Table 3: Mean ratings and t-test statistics of the responses of Business Education Lecturers and Students on the Challenges Undermining Effective Use of M-learning for Instructional Delivery in Business Education in the Study Area (n = 170).



SN	Challenges in the use of m-learning	\bar{X}_L	\bar{X}_S	\bar{X}_G	SD _G	p-value	Remarks	
							RQ	H0
1	The challenge of unstable power supply for constant charging of m-learning devices could be frustrating.	3.59	3.57	3.58	0.92	0.73	A	NS
2	Problem of internet connectivity is a major limitation in the use of m-learning technologies	3.56	3.51	3.53	0.87	0.44	A	NS
3	There is possibility of environmental disturbance in the use of m-learning technologies by students and lecturers	3.52	3.27	3.39	0.93	0.01	A	S*
4	Durability and fragile nature of most of the handheld devices is a challenge	3.29	3.15	3.22	0.83	0.46	A	NS
5	Possibility of techno-phobia of being afraid of new technologies is a challenge of m-learning	3.42	3.40	3.41	0.73	0.71	A	NS
6	The fear of theft of m-learning technologies and associated information lost.	3.22	3.33	3.27	0.76	0.13	A	NS
7	M-learning cannot sustain the concentration span of students for long	3.64	3.65	3.64	0.78	0.87	A	NS
8	Information and interaction overload as a result of extensive use of the mobile devices	3.68	3.60	3.64	0.85	0.16	A	NS
9	Subject of mobility in the content of mobile learning is a challenge	3.46	3.44	3.45	0.79	0.40	A	NS
10	There is challenges with no restriction on learning time-table with m-learning devices	3.18	3.24	3.21	0.72	0.25	A	NS
11	Frequent changes in device models and technologies functionality	3.19	3.49	3.34	0.74	0.03	A	S*
12	Non willingness of some lecturers to adopt the use of m-learning technologies for instructional delivery.	3.35	3.55	3.45	0.86	0.01	A	S*
13	Accessibility and airtime recharge is a major barriers for end users of m-learning technologies	2.98	3.09	3.03	0.87	0.27	A	NS
14	The challenges of poor battery life span are common phenomena in the use of m-learning	3.51	3.58	3.54	0.63	0.17	A	NS
15	There is fragmentation in contents in learning through m-learning technologies	3.54	3.63	3.59	0.65	0.47	A	NS
16	The high cost of most m-learning technologies could be challenging	3.49	3.47	3.48	0.75	0.16	A	NS
17	Poor skills of some people in effective use of m-learning technologies	3.35	3.67	3.52	0.68	0.02	A	S*
18	Inadequate incentives to lecturers to acquire the needed m-learning devices for instruction	3.40	3.52	3.46	0.59	0.20	A	NS
19	Poor maintenance culture in effective use of m-learning devices and technologies	3.51	3.53	3.52	0.68	0.22	A	NS
20	Poor administration and supervision of m-learning related programme and instructions	3.30	3.50	3.40	0.82	0.04	A	S*

Note: \bar{X}_L = Mean of Lecturers; \bar{X}_S = Mean of Students; \bar{X}_G = Grand Mean; A = Agreed; N = Number of Respondents; S* = Significant; NS = Not Significant; Sig. at 0.05.

Data presented in Table 3 reveal that the grand mean ratings of the responses of respondents on the 20 items range from 3.03 to 3.64 which are all greater than the cut-off point value of 2.50 on 4-point rating scale. This indicates that the 20 identified items are



challenges undermining effective use of m-learning for instructional delivery in business education in colleges of education in Delta State. The grand standard deviation of the 20 items ranged from 0.59 to 0.93 which imply that the responses of the respondents are close to one another and the mean.

The data on t-test statistics show that the p-values of 15 out of the 20 items range from 0.13 to 0.87 which are all greater than 0.05 level of significance. This indicates that there are no significant differences in the mean ratings of the responses of business education lecturers and students on the 15 of the identified challenges undermining effective the use of m-learning for instructional delivery in business education. Therefore, the null hypothesis of no significant difference is accepted on the 15 items in the table. The p-values on the remaining four items (items 3, 11, 12, 17 and 20) are 0.01, 0.03, 0.01, 0.02 and 0.04 respectively which are in each case less than 0.05 level of significance. This signifies that there are significant differences in the mean ratings of the responses of business education lecturers and students on the five challenges undermining the use of m-learning technologies for instructional delivery in business education in colleges of education in Delta state. Thus, the null hypothesis of no significant difference is rejected on the five items.

Discussion of Findings

The findings of the study showed that the extent of utilization of m-learning technologies is relatively low for business education instructional delivery, setting assignment for business education students, assess students response, distributing lecture notes and materials to the research of students, download learning packages for effective teaching and learning Business education, recording students' scores, disseminate information on performance of students, administering test and examination to business education students and class management and control among others. In agreement with the findings of this study, Liverpool, Marut, Ndam and Oti (2010) reported that due to low adoption of m-learning instruction in Nigerian schools, a project was proposed for the integration of e-learning in Higher Education Institutions based on the experiences of the ICT-Maths initiative. Chaka and Govender (2014) reported that there are numerous federal, state and privately own universities and other tertiary institutions in Nigeria but few employ learning management systems or implement a viable e-learning system.

The study identified the instructional benefits of the use of m-learning technologies in business education instruction to include: m-learning reduces the distance between teacher and students, thereby reducing students' pressure, establishes a bridge between the formal and informal learning spaces for better application of acquired knowledge, motivate and stimulate students' interest in instruction, students who receive lectures via m-learning obtain better grades than those who receive conventional lectures, provides an opportunity to



enhance experiential learning, the use of m-learning technology is learner-centred and m-learning technologies make learning take place at any time and location among others. The findings of this study supported that of Boyinbode and Akinyede (2008) who reported that mobile learning is the best option to simplify the delivery of course materials to wherever 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 to different parts of Nigeria.

The challenges undermining effective utilization of m-learning technologies as found in this study include: the challenge of unstable power supply for constant charging of m-learning devices could be frustrating, poor internet connectivity is a major limitation in the use of m-learning technologies, fragile nature of most of the handheld devices is a challenge, techno-phobia of being afraid of new technologies is a challenge of m-learning, fear of theft of m-learning technologies and associated information lost, m-learning cannot sustain the concentration span of students for long, frequent changes in device models and technologies functionality, accessibility and airtime recharge is a major barriers for end users of m-learning technologies and the challenges of poor battery life span are common phenomena in the use of m-learning among others. The findings of this study corroborated that of Amiaya and Ranor (2015) who investigated challenges and benefits of mobile learning adoption in OTM programme in Delta State Polytechnics and found the challenges to the use of mobile learning to include: connectivity and battery life span are common phenomena, accessibility and cost barriers for end users are common, durability and obsolescence of the handheld devices, subject of mobility in the content of mobile learning is a challenge.

Conclusion

The bulk of the teaching and learning of business education in Delta State is characterised by gross use of traditional board and markers system of instructional delivery instead of the use of mobile learning technologies for effective teaching and learning. Hence, this study was carried out to assess mobile learning technologies application for Business Education instruction in colleges of education in Delta State, Nigeria. The findings of the study showed that the extent of utilization of m-learning technologies is relatively low for business education instructional delivery. The study equally identified 15 instructional benefits of the use of m-learning technologies in business education instruction and 20 challenges undermining effective utilization of m-learning technologies for teaching and learning business education in colleges of education in Delta State. Findings on the null hypotheses tested revealed that there were no significant differences in the mean ratings of the responses of business education lecturers and students on the 40 out of the 50 items on



which the hypotheses were tested, whereas, there were significant differences in the mean ratings of the responses of the two groups of respondents on the remaining 10 items.

Recommendations

Sequel to the findings of the study, it is recommended that;

1. There should be capacity building training for technical-know-how of lecturers for m-learning skill update in effective operation of m-learning devices for teaching, learning and research purposes.
2. The government and the managements of the colleges of education in the State should ensure effective connectivity of the schools to electricity and network for efficient use of mobile technologies for teaching and learning.
3. The challenges indentified in the study as undermining effective utilization of m-learning technologies should be properly addressed by the government and school authorities for effective m-learning based instruction in schools.
4. The managements of the colleges of education should encourage and support their lecturers with relevant incentives to attend electronics and mobile learning conferences both locally and internationally.

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