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Research Article

Extent of Utilization of E-Learning Technologies by Secondary School Teachers for Instructional Delivery in Abia State

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Abstract: The need to improve the standard of teaching and learning in public and private secondary schools necessitated this study to determine the extent of utilization of e-learning technologies by secondary school teachers for instructional delivery in Abia State**.** Two research questions and one null hypothesis guided the study. Descriptive survey research design was adopted. The population of the study comprised 4,000 secondary school teachers in public and private secondary schools in Abia State. Taro Yamane formula was used to draw 1,200 teachers. A-20 item questionnaire titled Utilization of E-learning Technology by Secondary School Teachers (UETSST) and face validated by three experts in the field of education was used for data collection. The reliability of the instrument was established through pilot-testing and data analysis using Cronbach alpha method yielded correlation coefficients of 0.81 and 0.92 for sections A and B and overall coefficients value of 0.87. Mean and standard deviation was used to answer the research questions and determine the homogeneity in opinions of the respondents while the hypothesis was tested using t-test at 0.05 alpha level. Findings showed that respondents' utilize e-learning technologies at small extent due to a number of constraints. It was also revealed that public and private secondary school teachers differ significantly in their mean ratings on the extent they utilize e-learning technologies for instructional delivery. Based on the findings of the study, the researchers concluded that there is need for training of secondary school teachers on how to effectively utilize e-learning technologies to ensure teaching and learning effectiveness. It was recommended among others that; the federal and state governments should ensure adequate provision of e-learning technologies for use by teachers in all fields of study. Because e-learning technologies are expensive to acquire, and cannot be left in the hands of secondary schools.

Keywords: Utilization, E-learning technologies, Instructional delivery.

Introduction

Information and communication technology are vital factors in the successful development of education. Education for new emerging societies requires ICT to facilitate more meaningful learning. ICTs are not only means of improving society, but also vital for improving the standard of teaching and learning. Improved secondary education is essential to the creation of effective human capital in any country and the need for ICT in Nigerian secondary schools cannot be overemphasized in this technological driven age (Nwaukwa, 2015). The use of information and communication technology (ICT) has brought about a change in learning environment and transforms learning and teaching process in which students deal with knowledge in an active, self-directed and constructive ways. ICT is not only considered as a

tool to be added to existing traditional teaching methods, it is an important gadget to support new ways of teaching and learning (Volman & Van Eck in Nwaukwa, 2015).

In view of the importance of ICT in enhancing standard of education, UNESCO gives high priority to the use of ICT for expanding access to quality education. Therefore, UNESCO member states are required to recognize these new gadgets as a catalyst for educational reform and innovation, information accessibility, revision of curriculum to meet new demands of future education and teacher development (Dae, Hye-Kyung & Hyeonjin, 2010).

The integration of ICT in teaching and learning process has resulted in a new system of learning globally referred to as "e-learning". According to the Facilitating E-learning Industry Law as cited in Dae, Hye-Kyung and Hyeonjin (2010), e-learning is a learning process utilizing electronic devices, information technology and broadcasting communication technology. E-learning is only made possible when ICT infrastructure has been put in place. E-learning is the appropriate application of the internet to support the delivery of skills and knowledge in a holistic approach not restricted to a particular courses, technologies or infrastructure.

Stockley (2006) defined e-learning as the use of a computer or electronic device (for example, a mobile phone, internet, intranet, CD–ROM and DVD to provide training, educational or learning materials). The basic principle of e-learning is connectivity, that is, the process by which computers are networked to share information which can connect people (Okure, 2008). E-learning drives education reform that provides access anytime and anywhere to students with desire to learn.

Emrah (2006) noted that e-learning encourages the continued modification of teaching and assessment methods to nurture thinking skills, creativity and knowledge generation. E-learning also offers students opportunities to develop communication, collaborative and life-long learning skills.

E-learning technologies such as audio, video, data or multimedia cable satellite, Fibre optics, wireless (radio, infra–red, Bluetooth, Wi-Fi) have the potentials for revolutionalizing the way teachers teach and students learn whether at the junior or senior secondary schools in Nigeria. Horton (2005) viewed e-learning technologies as those electronic learning technologies like the internet, software applications, hardware components and digital technologies that are used to support the educational (teaching and learning) processes. This means that e-learning technologies is needed in all functional areas of education. The only factor, according to the author, is the creativity of teachers to access and use them in instructional delivery.

The rapid growth in e-learning is influenced by the high demand and supply of e-learning technologies. E-learning technology is highly demanded by teachers and students because of its cost-effectiveness, flexibility of access, elimination of distance barriers for learners, creating opportunities for individual differences and permission for alternative pedagogies like simulation, experiential, interactivity and self-paced learning.

Successful utilization of e-learning in teaching and learning process according to Al-adwan and Smedley (2012) is highly dependent on availability of e-learning technologies, teachers' ICT and pedagogical competencies. Utilizing e-learning in classroom instruction also raises many financial and strategic challenges. Schools struggle to find adequate resources to develop and maintain proper equipment, provide constant technical support, fund training

courses and hire support staff (Mackeogh & Fox, 2009). For secondary schools to be able to adopt e-learning, authorities of secondary schools must provide adequate and reliable technical infrastructure to support e-learning tools. Instructors must also re-design their courses to incorporate e-learning effectively into their pedagogy (Policy Note, 2005).

However, Organization of Economic Co-Operation and Development (OECD, 2015), stated that e-learning technology is still slow in terms of utilization by many secondary school teachers in developing countries (Nigeria inclusive). Agboeze, et al. (2012) lamented that the pace of development and utilization of e-learning technologies for teaching and learning (especially in secondary schools) in developing countries like Nigeria was still very low. Leem and Lim (2007) reported that both teachers and learners alike, lacked meaningful support systems and opportunities to actively participate in e-Learning programmes. There is a relationship between Leem and Lim study and the current research in that they both sought to examine the usage of e-learning in instructional delivery. They both also use survey questionnaire to collect data. Leem's study differs from the current study in that the current study focuses on secondary school teachers in Abia State, Nigeria.

In the same vein, Atsumbe and Duhu (2012) investigated the availability and utilization of e-learning infrastructures in Federal Universities of Technology, Minna, Nigeria. The study was a descriptive survey research design. 382 students and 182 lecturers randomly selected from the four departments formed the population of the study. Structured questionnaire was also used to collect data for the study. Data collected was analyzed using mean and t-test. The findings showed that e-learning infrastructures are not adequate for teaching and learning. Lecturers and students have laptops and can access internet, but they do not use them for teaching and learning. The relatedness of Asumbe and Nuhu (2012) study and the current study is that both sought to investigate the use of e-learning in instructional delivery. Both also adopted descriptive survey design and use mean and t-test to analyze data. However, their study differ from the current study in that it focused majorly on availability and utilization of e-learning infrastructures in Federal University of Technology Minna, while the current study focused on extent of utilization of e-learning technologies by teachers of secondary schools in Abia State. Their study also investigated both students and lecturers, while the current study was limited to only secondary school teachers.

Statement of the Problem

E-learning technologies have been viewed as tools used to remove limitations of time and space so that students can learn anytime and anywhere. Research have shown that e-learning enhances teaching and learning by providing opportunities for students to applying knowledge to new situations, analyzing information, generating new ideas, communicating, collaborating, solving problems and making decisions. These skills are relevant in this dynamic society. The call for utilization of e-learning technologies in instructional delivery is to infuse and inject efficiency and effectiveness in educational system. However, in Nigeria, secondary school teachers' e-learning utilization seems to be challenged by problem of ICT infrastructure such as computer, computer laboratories, internet and e-mail facilities, videophone systems and teleconferencing devices, wireless applications, digital library, digital classrooms and multimedia systems. Shahadat, Muhbub and Clement (2012) observed with great concern that secondary schools teachers are finding it difficult to even utilize e-learning in instructional delivery. This could be linked to high cost of ICT infrastructures, high cost of maintenance, insufficient funding for the development of e-learning infrastructures, teachers' preference of traditional talk and talk method, and lack of ICT skills by teachers.

The real issue is, are secondary school teachers integrating these facilities to support instruction, and enable students to use technology as an important gadget to meet their learning goals? The inability of secondary school teachers to utilize e-learning technologies in instructional delivery could result to students not having enough opportunities to use ICT to achieve their learning goals, teachers' continued use of traditional method of teaching. Half-baked students produced, lacking adequate ICT skills necessary for gainful employment or rather to be self-employed upon graduation. However, there is insufficient empirical evidence on the extent e-learning technologies are utilized by secondary schools teachers in teaching in Abia State. it is this gap that this study sought to fill.

Purpose of the Study

The main purpose of the study was to determine the extent of utilization of e-learning technologies by secondary school teachers for instructional delivery in Abia State. Specifically, the study determined the views of secondary school teachers in Abia State on:

1) The extent of utilization of e-learning technologies for instructional delivery.
2) Constraints to effective utilization of e-learning technologies in instructional delivery.

Research Questions

The following research questions guided the study:

1) To what extent are available e-learning technologies utilized by secondary school teachers in instructional delivery in Abia State?
2) What are the constraints militating against the extent of utilization of e-learning technologies in instructional delivery in Abia State?

Hypotheses

The following null hypothesis was tested at 0.05 significance level:

1) Public and private secondary school teachers do not differ significantly in their mean ratings on the extent they utilize e-learning technologies in instructional delivery in Abia State.

Delivery of instruction via E-learning

According to Claudia and Popa (2008), e-learning could be applied in instruction as follow:

a) Computer-Based Training (CBT): Computer-based training (CBT) is any course of instruction whose primary means of delivery is a computer. A CBT courseware may be delivered via a software product installed on a single computer, through a corporate or educational intranet, in this case, the teacher does not need internet or website. All that is needed is a computer, a projector, scanner and multimedia objects such as audio, video and speakers for the transmission of learning contents or it could be delivered over the Internet as Web-based training. Teachers can use CBT to teach students because it is especially good for keyboarding, word processing, information management, mathematics amongst other subject areas.

b) Web-based Training: Web-based training (WBT) is an innovative approach to learning in which computer-based training (CBT) is transformed by the technologies and methodologies of the World Wide Web, the Internet, and intranets (Kilby, 2009). Web-based training could be used to present contents live and in a structure promoting self-directed and self-paced instruction on any topic at any distance. WBT could also be used in the provision of remedial lessons to students. The teacher can also use it for evaluation and assessment of the students objectively.

c) Collaborative Learning: Collaborative Learning is online learning, based on interaction with others learners/instructors (Siadaty & Taghiyareh, 2008). E-learning particularly gives room for collaborative and students'-centered learning. When using e-learning technology in classrooms, all the teacher does is to guide the learners in a virtual classroom environment, through interactive online learning, such as shared whiteboards, shared application software, chat functionality and audio/video over the network (Brown, in Ojeaga & Igbenedion, 2012).

d) Informal E-learning: E-learning can also help to facilitate informal learning in secondary schools. Through internet and e-learning, the students can learn outside the subject based materials, traditional classroom and can learn about other important things that affect their lives. Students also have the opportunity to learn during holidays and vacations without necessary being taught by his teacher.

Why is E-learning Important in Secondary Education?

According to Ojeaga and Igbenedion (2012), through e-learning, students in secondary schools would be able to communicate, collaborate and cooperate with other learners worldwide and assess worldwide libraries irrespective of their geographical locations. This brings to fulfillment the goal of secondary education as stated in the National Policy on Education (FRN, 2013). E-learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way teachers teach and students learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers, but alongside existing methods it can enhance the quality and reach of teaching, and reduce the time spent on instruction. It can enable every learner to achieve his or her potential, and help to build an educational workforce empowered to change. It makes possible a truly ambitious education system for a future learning society. E-learning is relevant to all subjects and to learners at every stage of learning or training. E-learning can even reach out and re-engage students who are currently not involved in education because it is interactive, and can adapt to their needs. Raising standards and improving attainment–by using self-paced, individualized and interactive materials to improve individual support to learners as they move up the system (Education and Skills, 2003).

Constraints to Effective Utilization of E-Learning Technologies in Instructional Delivery

Constraints to effective e-learning utilization from teachers' perspective according to Jo (2013) include: weak ICT infrastructure, insufficient time to master new e-learning software or integrate ICT during a class period, low software competence and habitual ways of conceptualizing what and how students should learn.

Other constraints include teachers' limited knowledge and experience of ICT in teaching contexts, lack of specific knowledge about technology and how to combine it with the existing pedagogical content knowledge to support student learning, and technical problems in the classroom.

Method

A descriptive survey research design was adopted for the study. The design was adopted because it provided the researcher the opportunity of sampling opinion from a significant representative number of respondents in the area of the study. The population of the study comprised all the 4000 teachers of public and private secondary schools in the three (3) educational zones in Abia State. Based on the data collected from the Secondary Education

Management Board Umuahia as at, 2019, the three zones are Aba zone with 2,160 teachers, Ohafia zone 812 and Umuahia zone 1, 082. The Taro Yamane formula was used to draw 1,200 teachers from the three zones. The instrument used was a structured questionnaire titled "Utilization of E-learning Technology by Secondary School Teachers (UETSST)". The instrument contains two parts, 1 and 2. Part 1 deals with demographic data of the respondents. Part 2 contains sections A and B. Section A contains 15 Items on e-learning technologies used in instruction, while section B contains 5 items on constraints to effective e-learning utilization. Face validity of the instrument was established using two experts in Technology and Vocational Education Department and one expert from Measurement and Evaluation Unit both in Nnamdi Azikiwe University Awka. Pilot test was used to ascertain the reliability of the instrument and data analysis using Cronbach alpha method yielded correlation coefficients of 0.81 and 0.92 for sections A and B and overall coefficients value of 0.87, meaning that the instrument was 87 percent reliable.

The instrument was then administered to the respondents with the help of five research assistants adequately briefed. Out of the 1,200 copies of the questionnaire administered, 1,160 copies were correctly filled and returned, giving a percentage return of 97.

Mean and standard deviation was used to answer the two research questions and to determine the homogeneity in opinions of the respondents while the hypothesis was tested using t-test. The analysis was carried out using SPSS version 19.

Data Analysis

Research Question 1

To what extent are e-learning technologies utilized by secondary school teachers in instructional delivery in Abia State?

Table 1. Respondents' mean ratings and standard deviation on extent of e-learning technologies utilization in instructional delivery (N = 1,160)

S/N	Items on E-learning Technologies	$\bar{X}$	SD	Remarks
1	Computer simulation	1.63	1.04	Small Extent
2	Instructional television	2.29	1.18	Small Extent
3	Passing of instruction via Telephone (cell phone)	3.68	0.74	Great Extent
4	Radio player for listen to educational programmes	3.12	1.11	Moderate Extent
5	Flash drive for storing instructional materials	4.61	1.32	Very Great Extent
6	Word processing software	3.51	1.80	Great Extent
7	Spreadsheet (excel) software	2.41	1.01	Small Extent
8	Design and graphic software	1.63	0.98	Small Extent
9	Desktop publishing software to support teaching	2.34	1.22	Small Extent
10	Statistical Analysis and forecasting software	1.61	0.35	Small Extent
11	Overhead projector	2.12	0.78	Small Extent
12	Wireless network	1.66	1.27	Small Extent
13	Internet and Local Area Network	1.15	1.12	Very Small Extent
14	Mobile/Smart phone	4.32	1.89	Great Extent
15	Social media e.g. Chat room, Facebook Twitter, 2go	3.49	1.32	Moderate Extent
Cluster Mean		**2.39**		Small Extent

The result in Table 1 shows that 8 out of 15 e-learning technologies listed are being utilized at small extent by the respondents. Only flash drive for storing instructional materials with a mean score of 4.61 is being utilized at very great extent.

Items 3, 6 and 14 with mean scores of 3.68, 3.51 and 4.32 are being utilized at great extent. While internet and Local Area Network (LAN) with mean score of 1.15 is being utilized at very small extent, social media such as Facebook, 2go, Chat room, Twitter etc. are utilized at moderate extent.

The cluster mean score of 2.39 indicates that respondents' utilize e-learning technologies at small extent. The standard deviation ranging from 0.35 to 1.89 showed that the respondents were not homogeneous in their opinions on the extent e-learning technologies are utilized in instructional delivery.

Research Question 2
What are the constraints militating against the extent of utilization of e-learning technologies in instructional delivery in Abia State?

Table 2. Respondents' mean ratings and standard deviation on constraints to utilization of e-learning technologies in instructional delivery (N = 1,160)

S/N	Items on constraints E-learning Technologies Utilization	$\overline{X}$	SD	Remarks
16	Lack of technical support regarding e-learning utilization	3.77	1.24	Agreed
17	Lack of ICT infrastructure (i.e. computers, computer lab, internet)	3.80	1.34	Agreed
18	Curriculum does not allow enough time to utilize e-learning technologies in teaching	3.75	1.10	Agreed
19	Lack of training opportunities for e-learning utilization knowledge acquisition	3.87	1.07	Agreed
20	Schools are unsure as to how effectively to integrate ICT in teaching	3.67	1.07	Agreed
Cluster Means		**3.58**		**Agreed**

Result in table 2 indicate that secondary school teachers in Abia State agreed that items listed in 16-20 are hindering them from utilizing e-learning technologies in instructional delivery. Lack of training opportunities for utilizing e-learning was seen as their major constraints. The cluster mean score of 3.58 shows that respondents generally agreed to the statements.

Hypothesis 1
Public and private secondary school teachers do not differ significantly in their mean ratings on the extent they utilize e-learning technologies in instructional delivery in Abia State.

This null hypothesis was tested at a 0.05 level of significance using z-test. The results are presented in Table 3.

Table 3. Result of the z-test analysis of respondents in public and private secondary schools on the extent they utilize e-learning technologies in classroom instruction

Location of Schools	N	$\overline{X}$	SD	df	t-cal	P-value	Decision
Public	703	3.30	1.17	1.158	5.619	0.003	Significant
Private	457	2.21	1.30				

Table 3 also shows that the t-calculated value of 5.619 with p-value of 0.003 is less than the alpha value of 0.05(0.003 < 0.05) at 1,158 degree of freedom. Since the p-value is less than the level of significant, the null hypothesis was therefore rejected. This means that the views of teachers in both public and private secondary schools on e-learning utilization in instructional delivery in Abia State differ significantly.

Discussion

Findings of the study revealed that the extent to which secondary school teachers in Abia State utilize e-learning technologies was small. Out of the 15 e-learning technologies listed in the table, 60 percent of them were being utilized at small extent while only 40 percent were being utilized at either great or moderate extent.

The findings of this study is in agreement with that of Shahadat, Muhbub and Clement (2012), which revealed that secondary schools teachers are finding it difficult to even utilize e-learning in instructional delivery as a result of high cost of ICT infrastructures, high cost of maintenance, insufficient funding for the development of e-learning infrastructures, teachers' preference of traditional talk and talk method, and lack of ICT skills by teachers.

Findings of the study indicated that secondary school teachers in Abia State are not adequately utilizing e-learning tools in their instructional delivery do to a number of constraints such as lack of technical support, lack or weak ICT infrastructures, curriculum not allowing enough time to utilize e-learning technologies in teaching and lack of training opportunities for e-learning utilization among others.

The findings agree with that of Jo (2013) which revealed that weak ICT infrastructure and insufficient time to master new e-learning softwares was the major barrier to teachers' use of e-learning in teaching.

From table 3, the result indicated that there is a significant difference in the mean ratings of public and private secondary school teachers on the extent they utilize e-learning tools in instructional delivery. This is in consonance with the findings of Nwana, (2012), which writing on the utilization and challenges in the application of e-learning in secondary schools in Onitsha North Local Government Area, Anambra State, Nigeria, revealed that acute shortage of e-learning materials such as on-line/internet-connected computers, e-mail facilities, multimedia television, multimedia computer and digital library were major causes of the disparity in e-learning utilization among teachers in public and private secondary schools.

Conclusions

From the findings of this study, one can see that lots of e-learning facilities which could help in improving the academic performance of students, bridge gaps that exist between theories and practice in secondary schools and widen student's knowledge, are utilized at small extent.

Despite the prevalent nature of ICT in virtually every aspect of human endeavors, they have not been widely utilized for teaching process in secondary schools due to a number of constraints. Based on the findings of this study, the researchers concluded that, there is need for training of teachers on how to effectively utilize these e-learning technologies to ensure teaching and learning effectiveness in the field at secondary school level.

Implications of the Study

The findings of this study have serious implications on the teaching and learning at secondary schools in Abia State. Secondary school teachers in Abia State secondary schools are expected to inculcate positive learning in their students through the ample utilization of e-learning technologies in their classroom instructions.

The finding that the teachers utilize e-learning technologies at small extent means that they are still resorting to the traditional method of teaching which results in producing students that is ill-equipped to tackle challenges in the 21st century.

Hence, secondary school teachers in both public and private schools need constant training and retraining to ensure effective utilization of e-learning technologies in instructional delivery.

The findings also revealed a number of constraints to effective utilization of e-learning technologies for instructional delivery. This implies that the Abia State government as well as the proprietors of private secondary schools have not be living up to their responsibilities in addressing challenges to effective utilization of ICT facilities in the state.

Recommendations

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

1) Public and private secondary school administrators should ensure security and adequate maintenance and upgrading of e-learning technologies in their schools for use by teachers and students.

2) Relevant supervisory agencies should ensure that ICT technologies are integrated in the teacher education programmes of universities and colleges of education. This will ensure that the graduates are capable of using ICT resources to support their teaching when employed in either public or private secondary schools.

3) The federal and state governments should ensure adequate provision of e-learning technologies for use by teachers in all fields of study. Because e-learning technologies are expensive to acquire, and cannot be left in the hands of secondary schools.

4) Abia State government as well as private secondary school owners should partner with private sectors in providing e-learning technologies for their schools. This could enable the teachers to utilize them in instructional delivery.

5) Abia State Ministry of Education should organize regular re-training programmes for teachers in both public and private secondary schools to enable them up-date their skills on utilization of e-learning technologies for improved classroom performance.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Agboeze, M.U., Ugwoke, E.O. and Onu, F.M. 2012. Utilization of e-learning technology resources in accounting education instructional delivery methods in Nigerian universities. International Journal of Educational Research, 12(1): 26-38.

2. Atsumbe, B.N., Raymond, E., Enoch, E.B. and Duhu, P. 2012. Availability and utilization of e-learning infrastructures in Federal University of Technology, Minna. Journal of Education and Practice, 3(13): 56-58.

3. Claudia, B. and Popa, E.M. 2008. E-Learning and its prospects in education. 12th WSEAS International Conference on Computers, Heraklion, Greece, July 23-25.

4. Dae, J.H., Hye-Kyung, Y. and Hyeonjin, K. 2010. E-learning in the Republic of Korea. UNESCO Institute for Information Technologies in Education, Moscow.

5. Federal Republic of Nigeria 2013. National Policy on Education (4th Ed.). Lagos: NERDC Press. Nigerian National Policy for Information Technology (IT): "Use It".

6. Horton, W.K. 2005. Designing Web-Based Training: How to Teach Anyone Anything Anywhere Anytime. John Wiley &Sons http://www.en.wikipedia.org/wiki/elearning

7. Jo, S.F. 2013. ICT in education: A critical literature review and its implications. International Journal of Education and Development using Information and Communication Technology, (IJEDICT), 9(1): 112-125.

8. Khan, S.H., Hasan, M. and Clement, C.K. 2012. Barriers to the introduction of ICT into education in developing countries: The example of Bangladesh. International Journal of Instruction, 5(2): 61-80.

9. Kilby, T. 2009. What is Web-Based Training? (@1994-2009) Tim Kilby. Retrieved October 11, 2010 from: http://www.webbasedtraining.com/primer_whatiswbt.aspx

10. Leem, J.H. and Lim, C. 2007. The current status of e-learning and strategies to enhance educational competitiveness in Korean higher education. The International Review of Research in Open and Distance Learning, 8(1). Retrieved January 14, 2010, from http://www.irrodl.org/index.php/irrodl/ article/view/380/763.

11. Nwana, S. 2012. Challenges in the application of e-Learning by secondary school teachers in Anambra State, Nigeria. African Journal of Teacher Education, 2(1): 67-72.

12. Nwaukwa, F.C. 2015. Extent of integration of information and communication technology in instructional delivery by secondary school business subjects teachers in Abia State. Unpublished Master's Thesis, Nnamdi Azikiwe University, Awka.

13. OECD 2005. E-Learning in tertiary education: Where do we stand? Paris: OECD.

14. Ojeaga, I.J. and Igbinedion, V.I. 2012. Potentials of e-learning as a study tool in business education in Nigerian schools. International Education Studies; 5(5): 218-225.

15. Okure, S. J. 2008. Using e-learning (of ICT) technologies: towards sustainable development in Nigeria. In Babalola, Akpa, Hauwa & Ayeni, (eds.): Managing education for sustainable development in developing countries. Ibadan: Nigerian Association for Educational Administration and Planning (NAEAP).

16. Siadaty, M. and Taghiyareh, F. 2008. E-Learning: From a pedagogical perspective. International Journal of Information Science and Technology, 6(2): 100-107.

17. Stockley, D. 2006. Implementing e-learning and "how to" guide. El-magazine (7). Retrieved from: http;//www.derestockley.Com.

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