Utilization of E-Learning Facilities for Effective Instructional Process in Tertiary Institutions, Rivers State

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***Abstract*: The study sought to examines the utilization of e-learning Facilities for effective instructional process in tertiary institutions in Rivers State, Nigeria. E-learning has become a new paradigm and a new philosophy in library' services as well as educational sector with a mission to serve as a development platform for present-day society based on knowledge. The study sought to ascertain lecturers' proficiency in the use of e-learning facilities in teaching and learning; and to ascertain students' proficiency in the use of e-learning facilities in teaching and learning. The design adopted for this study is descriptive survey design and was conducted in Port Harcourt in Rivers State. The population of this study comprised of all lectures and students of the tertiary in institutions in Rivers State. The instrument for data collection was a set of structured questionnaires titled Availability of E-Learning Facilities for Effective Instructional Process in Tertiary Institutions (AEFEIPTI). Data derived from the field were analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. and statistical tools such as mean and standard deviation were used to analyse the research questions, while z-test was used to test the hypothesis at 0.05 level of significance Findings from the study showed that there is significant difference between lecture and students rating regarding on the proficiency of lecturers and that of students in the utilization of e-learning facilities in tertiary institutions (z-cal = 20.86, z-crit = 1.96; df 769). Based on the findings of the study, it was recommended that universities should liaise or register with organizations that have or publish educational resources or websites for easy access of educational materials from these websites, amongst others.**

***Key words:* E-learning, E-learning facilities, Effective instructional process, Tertiary institutions, Rivers State**

I. INTRODUCTION

Background to the Study

E-learning can occur in or out of the classroom. It can be self-paced, asynchronous learning or may be instructor-led, synchronous learning. E-learning is suited to distance learning and flexible learning, but it can also be used in conjunction with face-to-face teaching, in which case the term, blended learning, is commonly used. E-learning applications and processes include multimedia learning, technology-enhanced learning (TEL), computer-based instruction (CBI), computer- managed instruction, computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), flexible learning, web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital education.

In other words, it is the use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere. Horton (2005) defined e-learning as the use of internet and digital technologies to create experiences that educate our fellow human beings. E-leaning has the potential to revolutionize the way we teach and how we learn (Kamba, 2009). It is interactive in that you can also communicate with your teachers, lecturers, professors or other students in your e-learning environment. Sometimes it is delivered live, where you can "electronically" raise your hand and interact in real time and sometimes it is a lecture that has been prerecorded. There is always a teacher or professor utilize/communicating with you and grading your participation, your assignments and your tests. E-Learning has been proven to be a successful method of training and education is becoming a way of life for many citizens in the world including the people of Rivers State and therefore expedient to know how the tertiary intuitions in Rivers State are utilizing the modern trends of academic pursuits and attainment i.e. e-learning.

The use of new multimedia technologies and the Internet in learning is seen as a means to improve accessibility, efficiency and quality of learning by facilitating access to information resources and services as well as remote exchanges and collaboration. Nonetheless, by the middle of the 20th century the growth in technology and applications even in the field of education became unavoidable to be ignored. According to Abimbade (2005), the world of technology continued to grow and today the whole world has become a global village. By the beginning of the 21st millennium educational technology has stretched educational boundaries and created new ones on a daily basis. One of these new and rapidly expanding boundaries is e-learning which is offering tremendous advantage to education sector. E-learning has become a new paradigm and a new philosophy in library' services as well as educational sector with a mission to serve as a development platform for present-day society based on knowledge.

Rivers State, has established ICT centers in almost all institutions. Most of these institutions are only utilizing the e-learning facilities to some extent. Rivers State University, however, in 2014 was rated as the best E-learning institution in Nigeria and the 15th best university in Nigeria.

Utilization of e-learning facilities has been a challenging issue, however, in most institutions of higher learning in Rivers State. This hampers the use of e-learning. Nigeria has a number of initiatives such as: National Policy on Computer Education, National Policy on Information Technology, Establishment of National Information Technology Development Agency (NITDA), amongst others

All these initiatives are meant to enhance rapid growth and development of ICT in the field of education. The education sector has been affected by ICTs which undoubtedly affected teaching, learning and research Yusuf, (2005). A great deal of research has proven the benefits to the quality of education.

The use of instructional technologies will improve the delivery of instructions and provide opportunity for students to access and learn new information, utilize information-based content objective and communicate what has been learnt to others. The performance of learning is ensured through retention and recall and this can be achieved more easily by the effective utilization of instructional technologies of e-learning.

The instructional materials are easily updated and permit the use of multimedia which leads to reinforced learning through the use of video, audio, quizzes and other forms of interaction. As the world is changing, the learning scenario is changing with it i.e. the world with the introduction of information and communication technology, which gives room to the new concept called e-learning. E-learning can improve retention, provide immediate feedback and allows learners to customize learning materials to meet their individual needs (Kirsh, 2002).

Manir (2007) carried out research on the availability and utilization of the internet in Nigerian universities, while, Kamba (2009), identifies the enabling factors, the traffic-jam and, forecasts the future growth of e-learning in Nigeria. Sharma et al (2009) suggested that a nation's route to becoming a successful knowledge-based economy is its ability to also become a learning society. The rest of the studies attempted to explore a variety of factors and intervening variables that might have an impact on the success of e-learning in any learning environment.

Statement of the Problem

The aim of this study is to verify the utilization of e-learning facilities for effective instructional process in tertiary institutions in Rivers State, Nigeria. E-learning can only be implemented when there is utilization of e-learning facilities.

Although, almost all the institutions have established ICT centres, none has fully complied with e-learning technologies in their teaching and learning processes. Only Rivers State University of Science and Technology, University Port Harcourt and Ignatius University of Education have been practicing e-learning, in terms of dissemination of information, enrollment of admission, registration of courses, payment of school fees and publication of results which is a supplementary aspect of e-learning. Students could be given web-based assignments and could possibly be asked to gadget the solution in a storage media such as CD-Plate or flash drive and then summit to the lecturers concerned or make presentations in a PowerPoint package.

What is the rate of utilization of e-learning facilities to both lecturers and students? Many students and staff decried the paucity of e-learning facilities in these institutions. Students and staff are unable to use the available ICT facilities due to lack of exposure in spite of the cyber charter centres and ICT libraries. They lamented the lack of opportunity for training with the few facilities on ground.

Purpose of the study

The purpose of this study is to investigate the utilization of e-learning facilities for effective instructional process in tertiary institutions, Rivers State.

Specifically, the objectives of this study are to:

1. Ascertain lecturers' proficiency in the use of e-learning facilities in teaching and learning
2. Ascertain students' proficiency in the use of e-learning facilities in teaching and learning.

Research Questions

The following research questions were raised to guide the study:

1. How proficient are lecturers in the use of e-learning facilities in Rivers State tertiary institutions?
2. What are the problems of utilization of e-learning facilities in Rivers State tertiary institutions?

Hypotheses

The null hypothesis stated below were tested at 0.05 level of significance to guide the study:

HOI**:** There is no significant difference between the proficiency of lecturers and that of students in the utilization of e-learning facilities in tertiary institutions.

Significance of the Study

The result of this study will be of great benefit in diverse ways. It will help the Government, educational administrators, lecturers, staff and students to acknowledge the roles and the importance of e-learning, to be challenged and directly involved in the utilization of e-learning facilities for both teaching learning.

To the lecturers, they can easily do their research work, prepare their course outline, send important course-related information to students via email and will even lecture his /her students despite the location. To the students, they can cover

the material at their own pace, go over it as often as they need, all without traveling to the classroom. There are no, transportation fees, athletic fees, housing and food service fees, plus they can take the class from any location with internet access. The content delivery is consistent and can be easily repeated if needed to gain a better understanding.

II. CONCEPTUAL FRAMEWORK

Concept of E-Learning

E-learning as a concept covers a range of applications, learning methods and processes (Rossi, 2009). It is therefore difficult to find a commonly accepted definition for the term e-learning and according to Oblinger and Hawkins (2005), there is even no common definition for the term. Holmes and Gardner (2006) also made a comment on these inconsistencies by saying that there may be as many definitions of the term e-learning as there are academic papers on the subject Dublin (2003) in trying to find a common meaning of the term e-learning went on to ask the following questions: Is e-learning an on-line coursework for students at a distance? Does it mean using a virtual learning environment to support the provision of campus-based education? Does it refer to an on-line tool to enrich, extend and enhance collaboration? OR is it a totally on-line learning or part of blended learning? (Dulin, 2003). Some of the definitions of the term e-learning as given by different researchers and institutions are reviewed below. In some definitions e-Learning encompasses more than just the offering of wholly on-line courses.

The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cable. E-Learning occurs when someone or an individual learns through the usage of information, communication and technologies (ICTs). Therefore, suffice to say, E-Learning happens simultaneously with the usage of ICT tools for learning as reported in the 'Towards a Unified E-Learning Strategy' documentation. According to Adeya (2002), ICTs are embedded in networks and services that affect the local and global accumulation and the flow of public and private knowledge. Therefore, it refers to those technologies that determine the efficiency and effectiveness with which we communicate and the devices that allow us to handle information in the teaching and learning processes which is one of the functions of e-learning.

E-Learning Classifications

According to Algahtani (2011), there have been some classifications based on the extent of their engagement in education. Some classifications are also based on the timing of interaction. Algahtani (2011) divided e-learning into two basic types:

1. consisting of computer-based
2. The internet-based e-learning.

Computer-Based: According to Algahtani (2011), the computer-based learning comprises the use of a full range of hardware and software generally that are available for the use of Information and Communication Technology and also each component can be used in either of two ways: computer managed instruction and computer-assisted-learning.

Internet Based E-Learning: The internet-based learning according to Almosa (2001) is a further improvement of the computer-based learning, and it makes the content available on the internet, with the readiness of links to related knowledge sources, for examples e-mail services and references which could be used by learners at any time and place as well as the availability or absence of teachers or instructors (Almosa, 2001). Zeitoun (2008) classified this by the extent of such features use in education, mixed or blended more, assistant mode, and completely online mode.

Empirical Review

Fully online provision at campus-based institutions will remain very much a minority in the short to medium term. Universities are more interested in improving their on-campus programmes by using e-learning to offer increased flexibility and content. They express relatively little interest in using e-learning to develop international and new markets or to cut costs by reducing the classroom element of their courses.

Universities are now thinking through and negotiating the potential contribution of e-learning to their organizational future. For some institutions, and in some countries, key barriers remain. Infrastructure and funding are among the important ones, but skepticism about the pedagogic value of e-learning and staff development are probably the most challenging. Institutions are grappling with bringing use and funding of e-learning into the mainstream of their organization, and are beginning to contemplate restructuring to take account of e-learning, in terms of staffing, staff development, course design and students' support (OECD 2005).

All institutions acknowledged the need to recruit a broader range of staff, such as technological experts, to complement academic staff. Another challenge is persuading current faculty members to use and develop e-learning. The general concept of "staff development" is widely seen as key to sustainable e-learning in tertiary education. Institutions are struggling with the division of labour between faculty members and "new" staff focused on the technical aspects of e-learning.

Challenges that Inhibit the Utilization of E-Learning in Nigeria Universities

E-learning in Nigerian tertiary institutions is still a dream because of poor ICT infrastructure and other socio-economic reasons. Due to very high primary cost of infrastructural development and to increase public access to internet and other ICTs, the developing countries are still far behind from getting benefit from the e-learning. According to Salawudeen (2010), Salleh and Iahad (2011), the major problems facing the proper implementation of e-learning in Nigerian tertiary institutions are as follows:

- Inequality of access to the technology itself by all the students. The cost of a personal computer (PC) and Laptop are still very high in Nigeria considering the income level of an average worker in the country. Few students that are privileged to have a PC/Laptop are not connected to the internet as this do attract extra cost which they cannot afford.
- Technophobia: Most of the student have no computer education background, hence they are afraid of operating one, some go to the extent of hiring expert at a cost to fill their admission, registration and other documents meant for them to fill online. However, the very few who have access to the computer do not know how to use it and maximize it usage.
- Internet Connectivity: The cost of accessing internet is still very high in Nigeria. Most Students make use of Cyber Café who charges between #100.00 and #150.00 per hour despite their poor services and slow rate of their server.

III. THEORETICAL FRAMEWORK

Constructivism

Constructivism is a learning theory describing the process of knowledge construction though constructivism is a learning theory, it is the application of what we often refer to as 'constructivist practices" (ZeMelman, Daniels & Hyda, 1993) in the classroom and elsewhere that provides support for the knowledge construction process. It is an approach to education that lays emphasis on the ways that people create meaning of the world through a series of individual constructs. Constructs are the different types of filters we choose to place over our realities to change our reality from chaos to order.

Constructivism is a learning process which allows a student to experience an environment first hand thereby giving the student reliable, trustworthy knowledge. Learners are active agents who engage in their own knowledge construction by integrating new information into their schema or mental structures. The learning process is a process of "meaning-making" in socially, culturally, historically and politically situated contexts. In a constructivism learning environment, students construct their own knowledge by testing ideas and approaches based on their prior knowledge and experience, applying these to new tasks, contexts and situations and integrating the new knowledge gained with pre-existing intellectual constructs.

The student is required to act upon the environment to both acquire and test new knowledge. Knowledge construction is an active, rather than a passive process. The process of constructing ones knowledge can involve both cognitive (Cunningham, 1993) and Physical Constructions of meaning, through the development of mental models or schemes, as well as physical or virtual representations of knowledge.

IV. METHODOLOGY

The design adopted for this study is descriptive survey design and was conducted in Port Harcourt in Rivers State. The population of this study comprised of all lectures and students of the tertiary in institutions in Rivers State. At the time of this study, there are five Tertiary institutions, each having its number of lecturers and students but collectively giving a total of 111,540 population size. The sample size for lectures and students was determined using the Taro Yamane formula and a sample size of 771 (371 lecturers and 400 students) was derived. The instrument for data collection was a set of structured questionnaires titled Utilization of E-Learning Facilities for Effective Instructional Process in Tertiary Institutions (UEFEIPTI). The instrument was subjected to face and content validity by the supervisor, and the reliability of the instrument was determined using the test-re-test technique, from which a reliability index of 0.88 was derived. Data derived from the field were sorted, coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. simple descriptive statistical tools such as mean and standard deviation were used to analyse the research questions, while z-test was used to test the hypothesis at 0.05 level of significance.

V. RESULT AND FINDINGS

Research Question 1: How proficient are lecturers and students in the use of e-learning facilities in Rivers State tertiary institutions?

Table 1: Mean and Standard deviation showing the proficiency of lecturers in the use of e-learning facilities in Rivers State tertiary institutions?

S/ No	Items	Mean	SD	Decision
	Lecturers' Response			
1	Lecturers are versatile in the use of computer applications to enhance teaching and learning	3.02	1.01	Agreed
2	Lecturers can use the internet effectively	3.06	0.83	Agreed
3	Online collaboration teleconferencing are employed by lecturers	2.98	0.88	Agreed
4	Lecturers prefer e-books to printed books when sourcing for academic information	3.10	1.02	Agreed
5	Lecturers provide recorded video or audio lectures to students	2.20	0.98	Disagreed
6	Lecturers personally have webpages, Wikis or Blogs	2.00	0.63	Disagreed
7	Lecturers have individual e-mail Accounts	1.60	0.49	Disagreed
8	Lecturers use e-learning facilities to enhance teaching and learning	1.60	0.80	Disagreed
	Students response			
9	Students browse and use the internet effectively	3.16	0.68	Agreed
10	Online charts between students are mainly for educational purposes	1.99	0.58	Disagreed

11	Students collaborate with other students online for academic purposes	2.68	0.93	Agreed
12	Students browse to get news/sports or fashion information	2.98	1.15	Agreed

Table 1 revealed that the mean score rating of the responses of the respondents for five items ranked below the cut-off point of 2.50 while the mean score of the remaining seven items were above 2.50.

Research Question 2: What are the problems of utilization of e-learning facilities in Rivers State tertiary institutions?

Table 2: Mean and standard deviation showing the problems of utilization of e-learning facilities in Rivers State tertiary institutions

S/No	Item	Mean	SD	Decision
1	High cost of 'air time' affects the use of internet Services.	3.17	0.74	Agreed
2	High cost of maintaining electronic gadgets discourages their use for learning.	2.86	1.13	Agreed
3	Funds are insufficient for the development of e-learning infrastructures.	2.53	0.87	Agreed
4	Lack of manpower to maintain Information Communication Technology (ICT) infrastructures	3.19	0.72	Agreed
5	Poor power supply affects the use of electronic Devices for teaching and learning.	3.18	0.99	Agreed
6	Relevant materials are difficult to find on the internet.	1.59	0.80	Disagreed
7	Contention between the school and lecturers on Intellectual property right is a factor that discourages the availability of e-learning facilities.	1.80	0.74	Disagreed
8	Lecturers may lose class control if e-learning is encouraged.	1.39	0.49	Disagreed

Table 3 shows that the mean score rating of the responses of respondents range from 1.39 to 3.18. All items ranked above the cut-off point except items 6, 7 and 8 which ranked below the cut-off point.

Testing of Research Hypotheses

HO_1: There is no significant difference between the proficiency of lecturers and that of students in the utilization of e-learning facilities in tertiary institutions.

Table 3: Z-test Result of the Difference in Mean Rating of the Respondents

Category	N	Mean	Std. Deviation	df	z-cal	z-crit	Decision
Lecturers	371	10.83	2.12	769	20.86	1.96	NS
Students	400	14.40	2.58				

The analysis in table 3 shows that the calculated z value of 20.86 is greater than the table value of 1.96. Hence, the null hypothesis is rejected, meaning that there is significant difference between lecture and students rating regarding on the proficiency of lecturers and that of students in the utilization of e-learning facilities in tertiary institutions

VI. DISCUSSION OF FINDINGS

This is a reflection of the emphasis being placed on e-learning in the university. Pirani (2004) stated that for an institution to be able to adopt e-learning, it must provide adequate and reliable technical infrastructures. From the above, it can be seen that e-learning infrastructures are inadequately provided in tertiary institutions for effective teaching and learning.

Findings also revealed that lecturers are aware of the internet and can surf the web. But they cannot use it in facilitating the teaching and learning. The table further revealed that lecturers versatile in the use of computer applications. However, this knowledge is not used for educational purposes. According to UNESCO (2002), the key to the use of ICT for educational purpose is not in ICT itself, but in understanding and strategically and logically employing it to meet educational goals. This proves that lecturers may have idea of ICT but may not be effective in using them to facilitate teaching; which may be attributed to inadequate training in the use of ICT for teaching.

Furthermore, findings revealed that students know how to use the internet and frequently surf the web. However, the students use the internet for social purposes and not for sourcing academic information. Despite the fact they have electronic devices that can store, access, send, manipulate and read audio-visual information; they do not use them to record and share lectures.

VII. CONCLUSION

It has been noted that e-learning is the application of internet to enhance learning. This study revealed that e-learning infrastructures are not available in tertiary institutions. Therefore, ICT infrastructures should be provided to facilitate effective teaching and learning in order to brace up to present day educational challenges. Efforts should be made towards tackling other factors that are militating against the usage of e-learning infrastructures. It is safe to conclude here that unless these facts are seriously taken into consideration and acted upon, education in Nigeria will only retrogress in a progressive world. Constraints identified in this study include insufficient funds for the development of e-learning infrastructures, inadequate facilities, equipment and infrastructure for e-learning purposes.

VIII. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made to help improve e-learning usage in tertiary institutions.

1. Universities should enter into contracts with internet service providers such as MTN, Airtel, Etisalat and Glo so that they can have reliable internet services for lecturers and students.
2. Universities should liaise or register with organizations that have or publish educational resources or websites for easy access of educational materials from these websites.

3. Universities should upgrade her website or launch a website which lecturers and students can use to disseminate or access information. Such website should enable lecturers to upload their course materials. Past projects should also be uploaded on the websites for easy access to both lecturers and students. The website should also freely host wikis/blogs and e-journals of the universities.

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