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

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Abstract
The study sought to examines the availability of e-learning Facilities for effective instructional process in tertiary institutions in Rivers State, Nigeria. E-learning as the use of internet and digital technologies to create experiences that educate our fellow human beings. The study was guided by two research objectives, two research questions and two hypotheses. 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 questionnaire 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 no significant difference between lecture and students rating regarding on the availability of e-learning facilities in the tertiary institutions (z-cal = 1.24, z-crit = 1.96; df 769); further findings showed that there is significant difference between lecture and students rating regarding on the functionality of e-learning facilities in the tertiary institutions (z-cal = 0.131, z-crit = 1.96; df 769). Based on the findings of the study, it was recommended that lecturers should be well trained in specific methods in which they could use electronic devices to enhance teaching. This could be achieved by contracting experts to develop curricular for training process, amongst others.

Keywords: *E-learning facilities, availability, effective instructional process, tertiary institutions*

INTRODUCTION

Background to the Study

Globally, the tertiary education sector has been greatly impacted by technological development as the availability of e-learning facilities has helped in making the learning process more efficient, effective and convenient. "E-learning is the use of electronic media, educational technology and information and communication technologies (ICT) in education" (OECD, 2003). E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and

web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlie many e-learning processes. So, in a system, where there is availability of e-learning facilities and these facilities are actually utilized to enhance teaching and learning, then the term availability of e-learning comes into fruition. Hence, availability, functionality and utilization of e-learning are pivotal to the integration of e-learning facilities in instructional processes.

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 interacting /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.

Nigeria's e-readiness ranking highlights the need to seek innovative solutions to improve teaching and learning more especially, in our tertiary institutions. In Port Harcourt, we have both federal and State tertiary institutions which include the following: University of Port Harcourt – Federal; Rivers State University formerly known as Rivers State University of Science/Technology; Ignatius Ajuru University of Education – State; Elechi Amadi Polytechnic - State and Rivers State College of Health Technology.

Currently, in Nigeria and especially in Port-Harcourt tertiary institutions, there is an increasing awareness on the use of Information and Communication Technologies (ICTs) and the application of online programs in enhancing teaching and learning. In all of these institutions, there are established Cyber charter schools and ICT libraries which supposed to have offered lecturers and students great opportunities to acquire full range of supplementary ICT/ e-learning programs, where lecturers could post course work/ assignments online i.e. (web-based activities) to students and the students in turn, from their comfort zone could go through their online materials, solve their assignments, ask their burdening questions to their lecturers for assessment and correction. Students could also receive feedback as necessary response to their questions. Lecturers still in their comfort zone could cross check students' responses and performance, score them and respond to the students promptly and examine their individual academic performance. However, these expectations are far-fetched. 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.

Statement of the Problem

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

What is the rate of availability 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. Many lecturers and students in both Federal and State tertiary institutions go to commercial cyber cafés to have access to computer and internet. Accessibility and availability of e-learning facilities remain challenging issues in Port Harcourt tertiary institutions.

Purpose of the Study

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

Specifically, the objectives of this study are to:

1. Determine the availability of e-learning facilities in Port Harcourt tertiary institutions.
2. Determine the functionality of e-learning facilities in Port Harcourt tertiary institutions.

Research Questions

The following research questions were raised to guide the study:

1. What are the available e-learning Facilities in Rivers State tertiary institutions?
2. What are the functional 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:

1. **HOI:** There is no significant difference in the mean response of lectures and students on the availability of e-learning facilities in the tertiary institutions, Rivers State,
2. **HO2:** There is no significant difference in the mean rating of lecturers and Students on the functionality of e-learning facilities in teaching and learning in the tertiary institutions, Rivers State,

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 availability of e-learning facilities for both teaching learning.

Results of academic performance are prompt. It will also serve as a wakeup call to the government and the educational educators to help provide these modern e-learning facilities to

the tertiary institutions to create enabling environment for both lecturers and students to participate and practice with them.

Conceptual Framework

Concept of E-Learning

E-learning refers to the use of information and communications technology (ICT) to enhance and/or support learning in tertiary education (OECD 2005). What then is ICT? Information and communication technology is another/extensional term for information technology which stresses the role of unified communications and the integration of telecommunications, computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. 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 (July 2003).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. It is an electronic means of capturing, processing storing and disseminating information.

Types of E-Learning/ Classifications

E-learning can be divided into several different types. In all cases, a campus-based institution is offering the courses, but using e-learning tied to the Internet or other online network to a different extent.

Web-supplemented courses focus on classroom-based teaching but include elements such as putting a course outline and lecture notes on line, use of e-mail and links to online resources.

Web-dependent courses require students to use the Internet for key elements of the programme such as online discussions, assessment, or online project/collaborative work, but without significant reduction in classroom time.

Empirical Review

E-Learning Integration in Tertiary Education

Institutions worldwide have adopted learning management systems (LMS) – software developed for administration and teaching in tertiary education. This software enables them to treat enrolment data electronically, offer electronic access to course materials and carry out assessments, for example, as well as offering online interaction between faculty and students. While the two leading commercial vendors of LMS software (Blackboard and WebCT) have attained significant market share, development of in-house software and the use of "open source" software freely available to all are noteworthy trends at tertiary institutions. The appeal of in-house/open source software sometimes lies in perceived inadequacies of commercial offerings, plus a desire to retain institutional autonomy over the instruction process, especially as it can represent valuable intellectual property. Although the multiplication of software platforms for e-learning reflects the novelty, relative immaturity and dynamism of LMS, it might also represent a wasteful duplication of effort.

Resistance to e-learning by faculty members may partly be due to their perceptions of the limitations of e-learning and the insufficient maturity of the tools available. But it can also be explained by a lack of time or motivation to carry out what is basically an additional task, since e-learning mostly supplements rather than replaces classroom-based teaching, coupled with insufficient literacy either in ICT in general or in e-learning applications. E-learning and the sharing of information it implies might also conflict to some extent with the professional culture of academics, based on autonomy and a reward system often based on research. Concerns about intellectual property rights may also pose a problem (OECD, 2005).

The Roles of E-Learning in the Academic Development of the Tertiary Institutions

The roles of e-learning in the tertiary education cannot be over emphasized. Liu and Wang (2009) found that the features of e-learning process are chiefly centered on the internet; global sharing and learning resources; information broadcasts and knowledge flow by way of network courses, and lastly flexibility of learning as computer-generated environment for learning is created to overcome issues of distance and time (Liu and Wang, 2009). Gotschall (2000) argues that the concept of e-learning is proposed based on distance learning, thus a transmission of lectures to distant locations by way of video presentations. Liu and Wang (2009) however claims that the progression of communications technologies, particularly the internet, did transform distance learning into e-learning.

Liaw and Huang (2003) defined e-learning based on the summaries of its characteristics. In the first place:

1. They propose a multimedia environment.
2. Secondly, they incorporate several kinds of International Journal of Education and Research Vol. 2 No. 12 December 2014, 399 information.
3. Thirdly, e-learning systems support collaborative communication, whereby users have total control over their own situations of learning.
4. Fourthly place, e-learning support networks for accessing information. And fifth, e-learning allows for the systems to be implemented freely on various kinds of computer operating systems.

METHOLOGY

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 questionnaire titled Availability of E-Learning Facilities for Effective Instructional Process in Tertiary Institutions (AEFEIPTI). 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.

Result and Findings

Research Question 1: What are the available e-learning Facilities in Rivers State Tertiary institutions?

Table 1: Percentage showing available e-learning Facilities in Rivers State Tertiary institutions

S/N	Items	Available F (%)	Not available F (%)	Decision
1	Multimedia PC/ Laptops	350(45.4)	421(54.6)	NA
2	Multimedia Projectors	210(27.2)	561(72.8)	NA
3	Interactive White Board	204(26.4)	567(73.6)	NA
4	Internet access	280(36.3)	491(63.7)	NA
5	Projectors screens	337(43.7)	434(56.3)	NA
6	Photocopiers, Scanners, Printers	439(56.9)	332(43.06)	A
7	Digital Video Cameras or Web-cameras	70(9.1)	701(90.9)	NA
8	Television-set	631(81.8)	140(18.2)	A
9	Radio	420(54.5)	351(45.5)	A
10	Digital Libraries	103(13.3)	668(86.7)	NA
11	Blank CDs	685(88.8)	86(11.2)	A
12	Video cameras	219(28.4)	552(71.5)	NA
13	Standby Generators	223(28.9)	548(71.1)	NA
14	Telephone Facilities	658(85.3)	113(14.7)	A
15	Flash drives/External Hard drives	522(67.7)	249(32.2)	A
16	Digital Video Disk players	223(28.9)	548(71.1)	NA
17	CD-ROMs in Specific subjects	255(33.0)	516(67.0)	NA
18	Instructional Video Tapes/VCD/DVD/IVD/IRI	203(26.3)	568(73.6)	NA
19	Instructional audio tapes	315(40.8)	456(59.2)	NA
20	Hypermedia and Hypertext resources	240(31.1)	531(68.9)	NA
21	computer media conferencing and audio conferencing	158(20.5)	613(79.5)	NA

A = Availability

F = Functionality

NA = Not Available

NF = Not Functional

D = Decision

Results from Table 1 shows that all the items except items 6, 8, 9, 11, 14, 15 are available. They include: Photocopiers, scanners, printers, television set, radio, blank CDs, telephone facilities and flash drives/external hard drives.

Research Question 2: What are the functional e-learning Facilities in Rivers State Tertiary Institutions?

Table 2: Percentage showing available e-learning Facilities in Rivers State Tertiary Institutions

S/N	Items	Functional F (%)	Not functional F (%)	Decision
1	Multimedia PC/ Laptops	103(13.35)	668(86.65)	NF
2	Multimedia Projectors	235(30.48)	536(69.52)	NF
3	Interactive White Board	322(41.77)	449(58.23)	NF
4	Internet access	304(39.42)	467(60.58)	NF
5	Projectors screens	294(38.14)	477(61.86)	NF
6	Photocopiers, Scanners, Printers	354(45.92)	417(54.08)	NF
7	Digital Video Cameras or Web-cameras	205(26.59)	566(73.41)	NF
8	Television-set	342(44.36)	429(55.64)	NF
9	Radio	623(80.81)	148(19.19)	F
10	Digital Libraries	311(40.34)	460(59.66)	NF
11	Blank CDs	532(69.01)	239(30.99)	F
12	Video cameras	135(17.51)	636(82.49)	NF
13	Standby Generators	283(36.71)	488(63.29)	NF
14	Telephone Facilities	101	670(86.90)	NF
15	Flash drives/External Hard drives	532(69.01)	239(30.99)	F
16	Digital Video Disk players	70(9.1)	701(90.9)	NF
17	CD-ROMs in Specific subjects	224(28.9)	547(71.1)	NF
18	Instructional Video Tapes/VCD/DVD/IVD/IRI	320(41.51)	451(58.49)	NF
19	Instructional audio tapes	285(36.73)	486(63.27)	NF
20	Hypermedia and Hypertext resources	109(14.13)	670(85.87)	NF
21	computer media conferencing and audio conferencing	202(26.1)	569(73.9)	NF

Results from Table 2 shows that all the items are not functional except items 6, 8, 9, 11, 14, 15. They include: Radio, Blank CDs and Flash drives/External Hard drives.

Testing of Research Hypotheses

HO_1: There is no significant difference in the mean response of lectures and students on the availability of e-learning facilities in the tertiary institutions, Rivers State

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	23.59	3.67	769	1.24	1.96	NS
Students	400	23.612	3.66				

The analysis in table 4.7 shows that the calculated z value of 1.24 is lesser than the table value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference between lecture and students rating regarding on the availability of e-learning facilities in the tertiary institutions.

HO_2: There is no significant difference in the mean rating of lecturers and Students on the functionality of e-learning facilities in teaching and learning in the tertiary institutions, Rivers State.

Table 4: **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	23.59	3.67	769	0.131	1.96	NS
Students	400	23.62	3.66				

The analysis in table 4.8 shows that the calculated z value of 0.131 is lesser than the table value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference between lecture and students rating regarding on the functionality of e-learning facilities in the tertiary institutions.

Discussion of findings

The findings revealed that e-learning equipment such as interactive white boards, computers, projectors, TV sets, and printers are not adequately provided by the university. 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.

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. UNESCO (2002) and Pirani (2004) are of the view that instructors need to know when, how and where to use ICT to enhance knowledge acquisition. The table further revealed that lecturers versatile in the use of computer applications.

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.

It was also revealed that the high cost of e-learning infrastructures, high cost of 'air time', materials, maintenance of gadgets; insufficient funds, lack of skilled manpower, poor power supply, lecturers preference to 'talk and chalk' as opposed to the use of e-learning facilities, and so on hinder the use of e-learning infrastructures.

The findings further show that there was no significant difference between federal and state universities with regards to access to e-learning facilities. This is probably due to the similarities in funding and supervisory bodies both types of institutions. The Nigerian government (federal

and state) has severally complained of her inability to continue funding education without assistance.

Conclusion

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.

Recommendation

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

1. Lecturers should be well trained in specific methods in which they could use electronic devices to enhance teaching. This could be achieved by contracting experts to develop curricular for training process.
2. Curricular for teaching that will inculcate the use of e-learning infrastructures by students should be developed.

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