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ORIGINAL ARTICLE

COST IMPLICATIONS FOR E-LEARNING IN THE MANAGEMENT OF UNIVERSITIES IN RIVERS STATE

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Abstract

The study examined the cost of e-learning in the management of universities in Rivers State. Four research questions and four hypotheses guided the study. The study adopted the descriptive survey design. The population of the study was 1,003 lecturers from the two-state universities in Rivers State. The sample for this study was 240 lecturers representing 24% of the population. The proportion stratified random sampling technique was used to draw the sample size. The instrument for data collection was a 15-item structured questionnaire titled "Cost of E-Learning in University Management Questionnaire (CEUMQ)". The instrument was validated by three experts in the Department of Measurement and Evaluation, and the department of Educational Management of the Ignatius Ajuru University of Education. A reliability index of 0.78 was established using the Cronbach Alpha method. The instrument was administered directly by the researcher and two research assistants. The research questions were answered using mean and standard deviation scores, while independent t-test statistic was used to test the null hypotheses at a 0.05 level of significance. The findings of the study showed that the cost of e-learning in the management of universities in Rivers State is: cost of providing e-learning facilities, maintaining e-learning facilities, and providing power supply. Besides, it was found that funds for providing e-learning facilities, training of personnel for e-learning, maintenance of e-learning facilities, and supply of power for e-learning were of low extent provided for e-learning in the

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management of universities in Rivers State. The test of hypotheses revealed that there was no significant difference in the mean ratings of male and female lecturers on the cost of e-learning. It was also found that there was a significant difference in the mean ratings of male and female lecturers on the extent to which funds are provided for e-learning facilities and the extent to which e-learning facilities are maintained for e-learning in the management of universities in Rivers State. On account of these findings, it was recommended among others that budgetary provision for education in the state should be increased to cushion the cost of e-learning, while e-learning facilities should be maintained regularly for effective use in the management of universities.

Keywords: Cost, E-learning, University, Management.

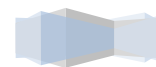
INTRODUCTION

The 21st century has thrown up some challenges in education due to the role of increasing use of technology in addressing all spheres of life. It has become increasingly necessary that as learners are educated to be relevant locally and globally using technological tools, an understanding of the associated cost in the management of educational institutions is necessary.

The digital transformation of the education system at all levels has allowed the incorporation of new management and teaching-learning environment called e-learning. The developing economies have enormous challenges in incorporating this new technology and making their educational system less effective and efficient. The challenges which bedevil the use of e-learning in the management of universities in Rivers State are perceived as: cost of providing e-learning facilities, training e-learning personnel, maintaining e-learning facilities, providing the power supply, and cost of providing internet server. This paper discussed the cost implications for these challenges in the management of universities in Rivers State to raise the capacity of schools in Nigeria as a developing economy to provide global e-learning.

In the management of schools, global learning can be presented through the conventional or e-learning approach. The conventional approach consists of methods and strategies that make learning possible through face-to-face interaction between the learners and teachers, and other instructional media that are made available to the learners in the classroom. On the other hand, e-learning is a generic term referring to the use of electronic media in instruction. Due to the features of these media, they can be used in the classroom or outside the classroom by the learners. They bring experiences from near, far and wide to the learners. Electronic media can be made available and used in the classroom, or made available elsewhere such as on the internet, and used by the learners in or outside the classroom. According to Internet Society (2017), when they are uploaded on the internet, they become ubiquitous and can be used in different places at the same time. They are self-instructional media that can be used without the teacher. However, the most important feature of electronic media is that they bring experience from far, wide and remote to the learners irrespective of their location, in the presence or absence of the teacher.

Electronic media (e-media) make possible digital encoding and decoding



of information and data. There are different types of e-media, such as radio, television, CD, DVD, CD-ROM, internet, mobile phone, computer, tablet, laptop and other handheld devices. These media facilitate instruction and provide a wide range of experiences, both proximate and remote, to the learners. These media make possible e-learning.

Different conceptualizations of e-learning abound in the literature. Generally speaking, it is the type of education provided through electronic media outside the conventional classroom. Current conceptualizations according to Okwo (2019) refer to e-learning as educational opportunities provided through the internet or internet-based media, to learners who are not involved in conventional classroom activities. In other words, it is an online platform for the provision of learning experiences, which is an alternative to the conventional face-to-face approach. The North Carolina e-learning organization (2019) defined it as learning obtained by the use of electronic technologies to access curriculum outside the traditional classroom. It noted that e-learning is in most cases referred to as the delivery of a course, or programme completely online or via the internet to learners in places rather than the classroom where the teacher is teaching. These definitions which emphasize the use of electronic media outside the classroom is more or less classical conceptualizations of e-learning. A more liberal and productive conceptualization of e-learning includes the use of electronic media, such as CD-ROMS, audio and video cassettes in the classroom to facilitate exercises or activities the learners are to engage in before, during or after the lesson; these activities complement that provided in the conventional classroom.

The more embracing conceptualization of e-learning provides the basis for the different models of blended or e-learning, for which the use of electronic media in a conventional classroom is at one end, and the delivery of instruction completely via the internet is at the other end a continuum. The classical model of e-learning as represented in the site of elearningnc.gov is learning that is online and presented over the internet in which the Classroom Management System (CMS), namely Blackboard, Moodle and Vista are utilized. Students can log in from anywhere in the world using the CMS and a web browser to access course materials such as syllabus, instructional materials, such as video and audio, and whiteboard screen on which the lesson is presented. It permits interaction with other learners, and with the instructor. This model of e-learning is a replica of what obtains in the traditional classroom, except that learning is completely over the internet. Hence, this model of e-learning is seen as an alternative to the traditional classroom.

The second model is the use of the internet and online electronic media to bring in far and remote experiences to the learners to supplement learning experiences provided in the classroom. This is the internet blended with the classroom model. The first and second models may not be suitable in places where internet facilities are inadequate.

The third model is offline electronic media blended with the traditional classroom. The electronic instructional media in form of audio and video can be



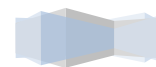
locally produced or improvised to suit the peculiarities and requirements of the environment. This model is particularly useful where internet facilities are lacking.

The forth model of e-learning is the use of offline electronic media to facilitate instruction outside the traditional classroom. The third and fourth models of e-learning appear to be ideal for most levels of education like universities in developing economies.

Universities are institutions of higher learning involved in the training of students for the development of higher-level manpower skills. Marcia (1997) described a university as an institution of higher education offering tuition in vocational and non-vocational subjects with the power to confer degrees to those found worthy and learning on fulfillment of the requirements for the course of study. According to the Manual on University management (1997), universities are created to Satisfy specific or general educational needs of a nation through the teaching of students, conducting research, and dissemination of knowledge together with other community services activities. Universities come into existence through Acts of Parliament and are governed by the prescription of law. The Vice-Chancellor is the chief executive and accounting officer who works with other principal officers and the Governing Council to implement policies and programmes in the university system. The achievement of the goals of university education requires deciding upon and implementing appropriate academic policies, and administering the services to support them with minimum economic waste and maximum utilization of human talents and material resources. This implies that the effective management of resources in the universities could be enhanced through e-learning to achieve set objectives.

Management is the process of getting things done through the use of human and material resources. Ocha (2012) described management as a process of coordinated activities involving planning, organizing and directing the activities of an organization to determine and accomplish stated objectives with the use of human and material resources. The United Nations Educational Scientific and Cultural Organization (UNESCO cited in Ogunu (2000) described management as a social process designed to ensure cooperation, participation, intervention and involvement of others in the effective achievement of predetermined objectives of an organization. In the view of Peretomode (1996), management is a process involving a sequence of coordinated events like planning, organizing, coordinating, controlling and directing or leading to use available human and material resources to achieve desirable outcomes in the fastest and most efficient way. From these definitions, it is deduced that management is a social process by which organizational goals are achieved through planning, organizing, leadership and coordinated efforts of human and material resources. Thus, management in this context is about the planning, organizing, coordinating and stimulating available human and material resources in the use of Information Communication Technology (ICT) for the implementation of policies and programmes in universities in Rivers State.

In the management of universities, the utilization of human and material



resources like ICT is important to achieve optimum results in instructional delivery. The management process in this context commences by planning the use of ICT in the various educational programmes and ensuring the sustenance of such programmes. To plan is to decide in advance what is to be done and how to do it with ICT most efficiently and effectively. For instance, Ocha (2012) noted that the function of planning in the implementing policies relating to students and staff personnel services activities such as admission, registration, the conduct of examination, computation of results, interdepartmental/Faculty transfer, preparation of transcripts, accommodation services emolument, promotions and salaries of staff requires developing electronic programmes and scheduling ICT facilities for use in obtaining best results in the most efficient ways to minimize errors. Chiaha, & Nane-Ejeh, (2015) also noted that in planning the use of ICT in various aspects of policy implementation in universities the integrated facilities should enhance accessibility, storage, and easy retrieval of needed information at any time. The novel Coronal Virus Disease otherwise known as the COVID-19 pandemic has caused a lot of drastic changes in the world as well as the academic system causing the closure of the classroom all over the world and forcing over 1.5 billion students and 63 educators to suddenly modify their face-to-face academic practices through e-learning (Tinio, 2012). This situation shows the strengths and weaknesses of the education system facing the challenge of digitalization. The digital breach is still a reality. Adopting the e-learning system of education was therefore necessary and undoubtedly unavoidable with the current situation of the Corona Virus outbreak (Aljawarnelh, 2019). Some developed countries of the world with hi-tech technology and well-structured and sophisticated educational institution were able to adjust to meet the current situation but developing countries like Nigeria still staggered on it due to lack of adequate infrastructures land lost implications. For instance, in a study carried out by Chiaha (2013) on the kind of e-learning facilities that students have access to; the percentage and extent students access this facility as well as the factors that hinder students from accessing e-learning facilities. The results show that about 42.9% of the students do not have access to e-learning facilities due to inadequacies and become frustrated in course of searching for research materials coupled with network and power problems. It is premised on these considerations that this study is carried out to empirically examine the cost implications for E-learning in the management of universities in Rivers State for plausible results.

Purpose of the Study

The main purpose of the study was to examine the cost implication for E-learning in the management of universities in Rivers State, specifically, the study seeks to:

1. *Identify the various cost associated with e-learning in universities in Rivers State.*
2. *To examine the extent funds provided for infrastructural provision for e-learning in the management of universities in Rivers State*



3. *Examine the extent to which e-learning facilities are maintained in the management of universities in Rivers State*
4. *Examine the extent power is supplied for e-learning in the management of universities in Rivers State*

Research Questions

The following research questions guided the study

1. *What are the costs implications for e-learning in the management of universities in Rivers State?*
2. *To what extent are funds provided for infrastructural facilities for e-learning in the management of universities in Rivers State?*
3. *To what extent are e-learning facilities maintained in the management of universities in Rivers State?*
4. *To what extent is power supplied for e-learning in the management of universities in Rivers State?*

Hypotheses

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

1. *There is no significant difference in the mean ratings of male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State.*
2. *There is no significant difference in the mean ratings of male and female lecturers on the extent funds are provided for infrastructural facilities for e-learning in the management of universities in Rivers State.*
3. *There is no significant difference in the mean ratings of male and female lecturers on the extent e-learning facilities are maintained in the management of universities in Rivers State.*
4. *There is no significant difference in the mean ratings of male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State.*

METHODOLOGY

The study adopted the descriptive survey design. The population of the study was 800 lecturers from the two-state universities in Rivers State. They are Rivers State university (423 lecturers) and Ignatius Ajuru University of Education (377 lecturers). The sample for this study was 240 lecturers representing 24% of the population. The proportion stratified random sampling technique was used to draw the sample. The instrument for data collection was a 15-item structured questionnaire titled "Cost of E-Learning in University Management Questionnaire (CEUMQ)". The instrument was validated by three experts in the Department of Measurement and Evaluation, and the department of Educational Management of the Ignatius Ajuru University of Education. A reliability index of 0.78 was established using the Cronbach Alpha method. The instrument was



administered directly by the researcher and two research assistants. The research questions were answered using means and standard deviation scores, while independent t-test statistic was used to test the null hypotheses at a 0.05 level of significance.

RESULTS

The results were presented in line with the research question and null hypothesis that guided the study as shown in the tables below:

Research Question 1

What are the cost implications for e-learning in the management of universities in Rivers State?

Table 1

Mean ratings on the various cost implications for e-learning in the management of universities in Rivers State

S/N O	Question items (various cost implications for e-learning)	Mean s (X)	STD	DEC
1	Cost of providing e-learning facilities	3.46	.64	A
2	Cost of training e-learning personnel	3.32	.67	A
3	Cost of maintaining e-learning facilities	3.19	.74	A
4	Cost of providing power supply	3.33	.66	A
5	Cost of providing internet server	3.36	.69	A
Grand Mean		3.33	.68	A

X= Mean; STD= Standard deviation; Dec=Decision; A=Agree

Table 1 showed the mean ratings of respondents on the various cost implication of e-learning in the management of universities in Rivers State. Item 1 had a mean and standard deviation score of 3.46 and .64 respectively. This means that the respondents agreed that the cost of providing e-learning facilities is one of the various cost implications for e-learning in the management of universities in Rivers State. Item 2 had a mean and standard deviation of 3.32 and .67 respectively. This means that the respondents agreed that the cost of training e-learning personnel is one of the various cost implications for e-learning in the management of universities in Rivers State. Item 3 had a mean rating of 3.19 and .74 respectively. This means that the respondents agreed that the cost of maintaining e-learning facilities is one of the various cost implications of e-learning in the management of universities in Rivers State. Item 4 had a mean and standard deviation of 3.33 and .66 respectively. This means that the respondents agreed that the cost of providing power supply is one of the various cost implications for e-learning in the management of universities in Rivers State. Item 5 had a mean and standard deviation of 3.36 and .69 respectively. This means that the respondents agreed that the cost of providing power supply is one of the various cost implications for e-learning in the management of



universities in Rivers State. Item 5 had a mean and standard deviation of 3.36 and .69 respectively. This means that the respondents agreed that the cost of providing an internet server is one of the various cost implications for e-learning in the management of universities in Rivers State. The cluster mean and standard deviation scores of 3.33 and .68 means that the respondents agreed that the cost of providing e-learning facilities, training e-learning personnel, maintaining e-learning facilities, providing the power supply, and cost of providing internet server are the various cost implication of e-learning in the management of universities in Rivers State.

Research Question 2

To what extent are funds provided for e-learning facilities in the management of universities in Rivers State?

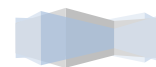
Table 2

Mean ratings on the extent are funds provided for e-learning facilities in the management of universities in Rivers State

S/N O	Question items (Extent are funds provided for e-learning facilities)	Means (X)	STD	DEC
6	The government provide funds for e-learning centres and e-libraries	1.86	.81	LE
7	Government allocate funds for e-learning facilities	1.61	.66	LE
8	Universities submit annual proposals for proper funding of e-learning	1.96	.90	LE
9	The government provides funds for equipment and materials needed for effective e-learning	1.83	.76	LE
10	The government ensures that schools e-learning facilities are made available for use	1.94	.94	LE
Grand Mean		1.84	.81	LE

X= Mean; STD= Standard deviation; Dec=Decision; LE= Low Extent

Table 2 showed the mean ratings of respondents on the extent funds are provided for e-learning facilities in the management of universities in Rivers State. Item 6 had a mean and standard deviation score of 1.86 and .81 respectively. This means that the respondents are of the view that the Government to a low extent provided funds for e-learning centres and e-libraries e-learning in the management of universities in Rivers State. Item 7 had a mean and standard deviation of 1.61 and .66 respectively. This means that the respondents are of the view that the government to a low extent allocated funds for e-learning facilities in the management of universities in Rivers State. Item 8 had a mean rating of 1.96 and .90 respectively. This means that the respondents are of the view that universities to a low extent submit annual proposals for proper funding of e-learning in the management of universities in Rivers State. Item 9 had a mean and standard deviation of 1.83 and .75 respectively. This



means that the respondents are of the view that the government to a low extent provided funds for equipment and materials needed for effective e-learning in the management of universities in Rivers State. Item 10 had a mean and standard deviation of 1.94 and .94 respectively. This means that the respondents are of the view that the government to a low extent ensured that e-learning facilities for schools are made available for use in the management of universities in Rivers State. The cluster mean and standard deviation scores of 1.84 and .81 means that the respondents to a low extent are of the view that funds provided for e-learning facilities in the management of universities in Rivers State.

Research Question 3

To what extent are e-learning facilities maintained in the management of universities in Rivers State?

Table 3

Mean ratings on the extent e-learning facilities are maintained in the management of universities in Rivers State

S/N O	Question items (Extent e-learning facilities are maintained)	Means (X)	STD	DEC
11	E-learning facilities are annually maintained	1.99	.87	LE
12	E-learning facilities are regularly maintained	1.83	.79	LE
13	The maintenance department of universities ensure routine e-learning maintenance	1.93	.94	LE
14	E-learning facilities are maintained according to manual prescription	1.78	.81	LE
15	E-learning facilities are maintained when they are faulty	2.58	1.00	HE
Grand Mean		1.92	.88	LE

X= Mean; STD= Standard deviation; Dec=Decision; LE= Low Extent

Table 3 showed the mean ratings of respondents on the extent e-learning facilities are maintained in the management of universities in Rivers State. Item 11 had a mean and standard deviation score of 1.99 and .87 respectively. This means that the respondents to a low extent of the view that e-learning facilities are annually maintained in the management of universities in Rivers State. Item 12 had a mean and standard deviation of 1.83 and .79 respectively. This means that the respondents to a low extent the view that e-learning facilities are regularly maintained in the management of universities in Rivers State. Item 13 had a mean rating of 1.93 and .94 respectively. This means that the respondents are of the view that to a low extent maintenance department of universities ensured routine e-learning facility maintenance in the management of universities in Rivers State. Item 14 had a mean and standard deviation of 1.78 and .81 respectively. This means that the respondents are of the view that university management to low extent e-learning facilities is maintained according to manual prescription in the management of universities in Rivers State. Item 15 had a mean and standard deviation of 2.58 and 1.00 respectively. This means that the



respondents are of the view that to a high extent e-learning facilities are maintained when they are faulty in universities in Rivers State. The cluster mean and standard deviation scores of 2.08 and 1.00 means that the respondents are of the view that to low extent e-learning facilities are maintained in the management of universities in Rivers State.

Research Question 4

To what extent power is supplied for e-learning in the management of universities in Rivers State?

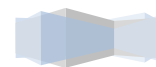
Table 4

Mean rating dents on the extent power is supplied for e-learning in the management of universities in Rivers State

S/N O	Question items (Extent power is supplied for e-learning)	Means (X)	STD	DEC
16	Power supplied for e-learning is regular in universities	2.08	1.00	LE
17	Power supply significantly affects e-learning in universities	2.37	1.09	LE
18	Dedicated lines for uninterrupted power supply are provided to enhance e-learning	1.99	.93	LE
19	The power supply for e-learning is highly interrupted	2.28	1.06	LE
20	Power supply for e-learning in universities is frequent	1.89	.85	LE
Grand Mean		2.12	.99	LE

X= Mean; STD= Standard deviation; Dec=Decision; LE= Low Extent

Table 4 showed the mean rating of respondents on the extent power is supplied for e-learning in the management of universities in Rivers State. Item 16 had a mean and standard deviation score of 2.08 and 1.00 respectively. This means that the respondents to a low extent are of the view that power supplied for e-learning is regular in the management of universities in Rivers State. Item 17 had a mean and standard deviation of 2.38 and 1.09 respectively. This means that the respondents to a low extent of the view that power supply significantly affects e-learning in the management of universities in Rivers State. Item 18 had a mean rating of 1.99 and .93 respectively. This means that the respondents are of the view that to a low extent dedicated lines for uninterrupted power supply are provided to enhance e-learning in the management of universities in Rivers State. Item 19 had a mean and standard deviation of 2.28 and 1.06 respectively. This means that the respondents are of the view that the power supply for e-learning is highly interrupted in the management of universities in Rivers State. Item 20 had a mean and standard deviation of 1.89 and .85 respectively. This means that the respondents are of the view that to a low extent power supply for e-learning in universities is frequent in the management of universities in Rivers



State. The cluster mean and standard deviation scores of 2.12 and .99 means that the respondents are of the view that to a low extent power is supplied for e-learning in the management of universities in Rivers State.

Test of Hypotheses

Ho₁: There is no significant difference in the mean ratings of male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State.

Table 5

Group statistics for male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State.

Gender	N	Mean	Std. Deviation	Std. Error Mean
Various cost implications:	108	17.2016	1.87400	.16829
Male	132	16.2368	2.13683	.17332

Female

The data in table 5 showed that male lecturers are of a higher opinion on the various cost implications for e-learning in the management of universities in Rivers State (17.2016 ± 1.87400) than female lecturers (16.2368 ± 2.13684) in Rivers State.

Table 6

Independent Samples Test for male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State.

		Cost implications fore-learning	
		Equal variance assumed	Equalvariance is not assumed
Lavene's Test for Equality of Variances	F	.017	
	Sig.	.896	
t-test for Equality of Means	t	3.941	3.994
	df	238	231.542
	Sig. (2-tailed)	.000	.000
	Mean Difference	.96477	.96477
	Std. Error Difference	.24481	.24158
	95% Confidence Interval of the difference	1.44672	1.44037
	Lower		
	Upper		



Table 6 showed that the group means are statistically significant because the value for equal variance assumed in the sig. (2-tailed) row is less than 0.05 that is ($P=.000<0.05$), $df (274)= 272.542$ $p=.000$. Therefore the null hypothesis of no significant difference in the mean ratings of male and female lecturers on the lecturers on the cost implications for e-learning in the management of universities in Rivers State is accepted. This implies that there is no significant difference in the mean ratings of male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State. The lecturers had this same opinion on the cost implications for e-learning in the management of universities in Rivers State.

Ho₂: There is no significant difference in the mean ratings of male and female lecturers on the extent funds are provided for the provision of e-learning facilities in the management of universities in Rivers State.

Table 7

Group statistics for male and female lecturers on the extent funds are provided for the provision of e-learning facilities in the management of universities in Rivers State.

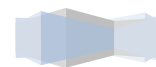
Gender	N	Mean	Std. Deviation	Std. Error Mean
Extent funds are provided:	108	9.4815	2.84976	.27422
Male	132	8.9773	2.20847	.19222
for e-learning				
Female				

The data in table 7 showed that male lecturers are of a higher opinion on the extent funds are provided for e-learning facilities in the management of universities in Rivers State (9.4815 ± 1.87400) than female lecturers (16.2368 ± 2.13684) in Rivers State.

Table 8

Independent Samples Test for male and female lecturers on the extent funds are provided for e-learning facilities in the management of universities in Rivers State

				Extent funds are provided for e-learning facilities	
				Equal variance assumed	Equal variance is not assumed
Lavene's	Test	for	F	15.689	
Equality of			Sig.	.000	
Variances					
t-test for	Equality	of	t	1.544	1.506
Means		df		238	198.786



Sig. (2-tailed)	.124	.134
Mean Difference	.50421	.50421
Std. Error	.32659	.33488
Difference	-.13917	-.15617
95% Confidence	1.14759	1.16458
Lower		
the interval of the		
difference		
Upper		

Table 8 showed that the group means are statistically insignificant because the value for equal variance is assumed in the sig. (2-tailed) row is greater than 0.05 that is ($P=.124>0.05$), $df (238)= 198.786$ $p=.124$. Therefore the null hypothesis of no significant difference in the mean ratings of male and female lecturers on the extent funds are provided for e-learning facilities in the management of universities in Rivers State is rejected. This implies that there is a significant difference in the mean ratings of male and female lecturers on the extent funds are provided for e-learning facilities in the management of universities in Rivers State. The lecturers had a different opinion on the extent funds are provided for e-learning facilities in the management of universities in Rivers State.

Ho₃: There is no significant difference in the mean ratings of male and female lecturers on the extent e-learning facilities are maintained for universities management in Rivers State.

Table 9: Group statistics for male and female lecturers on the extent e-learning facilities are maintained for e-learning in the management of universities in Rivers State.

Gender	N	Mean	Std. Deviation	Std. Error Mean
Extent e-learning:	108	9.4074	2.34037	.22520
Male	132	9.8425	2.55860	.22704
facilities are maintained,				
Female				
for e-learning				

The data in table 9 showed that female lecturers are of a higher opinion on the extente-learning facilities are maintained in the management of universities (9.8425 ± 2.55860) than male lecturers (9.4074 ± 2.34037) in Rivers State.

Table 10

Independent Samples Test for male and female lecturers on the extent e-learning facilities are maintained for e-learning in the management of universities in Rivers State

Extent e-learning facilities are maintained



			Equal variance assumed	Equal variance is not assumed
Lavene's Test for Equality of Variances	F	Sig.	1.466	.227
t-test for Equality of Means	t		-1.351	-1.361
	df		233	231.742
	Sig. (2-tailed)		.178	.175
	Mean Difference		-.43511	-.43511
	Std. Error		.32210	.31979
	Difference		-.106972	-.06517
	95% Confidence		.19949	.19495
	Lower			
	the interval of the			
	difference			
	Upper			

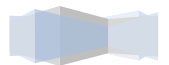
Table 10 showed that the group means are statistically significant because the value for equal variance is assumed in the sig. (2-tailed) row is greater than 0.05 that is ($P=.178 > 0.05$), $df (233) = 231.742$ $p=.178$. Therefore the null hypothesis of no significant difference in the mean ratings of male and female lecturers on the extent e-learning facilities are maintained for the management of universities in Rivers State is rejected. This implies that there is a significant difference in the mean ratings of male and female lecturers on the extent e-learning facilities are maintained for the management of universities in Rivers State. The lecturers do not have different opinions on the extent to which e-learning facilities are maintained in the management of universities in Rivers State.

Ho₄: There is no significant difference in the mean ratings of male and female lecturers on the extent power is supplied for e-learning in the management in Rivers State.

Table 11

Group statistics for male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State.

Gender	N	Mean	Std. Deviation	Std. Error Mean
Extent power is:	108	11.4537	2.71508	.26126
Male	132	9.9242	2.43581	.21201
Supplied for e-learning				
Female				



The data in table 11 showed that male lecturers are of a higher opinion on the extent power is supplied for e-learning in the management of universities (11.4537 \pm 2.71508) than female lecturers (9.9242 \pm 2.43581) in Rivers State.

Table 12

Independent Samples Test for male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State.

			Extent power is supplied for e-learning	
			Equal variance assumed	Equal variance not assumed
Lavene's Test for Equality of Variances	F	Sig.	2.185	.141
t-test for Equality of Means	t		4.595	4.546
	df		238	217.341
	Sig. (2-tailed)		.000	.000
	Mean Difference		1.52946	1.52946
	Std. Error Difference		.33282	.33646
	95% Confidence Interval of the difference		2.18512	2.19260
	Lower			
	Upper			

Table 12 showed that the group means are statistically insignificant because the value for equal variance is assumed in the sig. (2-tailed) row is less than 0.05 that is ($P=.000<0.05$), $df (238)= 217.341$ $p=.000$. Therefore the null hypothesis of no significant difference in the mean ratings of male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State is accepted. This implies that there is no significant difference in the mean ratings of male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State. The lecturers had a different opinion on the extent power is supplied for e-learning in the management of universities in Rivers State.

DISCUSSION OF THE FINDINGS

The discussion of the findings is done in line with the research questions and hypotheses:

Types of cost for e-learning in the management of universities

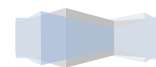
The findings in this regard showed that the types of cost incurred for e-learning in the management of universities in Rivers State include: cost of providing e-learning facilities, maintaining e-learning facilities, and cost of



providing power supply. The test of hypothesis revealed that there was no significant difference in the mean ratings of male and female lecturers on the cost implications for e-learning in the management of universities in Rivers State. This implied that both male and female lecturers do not differ in their opinion on the cost implications of e-learning in the management of universities in Rivers State. These findings agree with the assertion of Momah (2016) who argued that funding and maintenance are central and germane to the success at all levels of education in incorporating ICT. Unfortunately, there has been a wide outcry against poor funding of education and maintenance of facilities for e-learning in Nigeria especially at the university level between 1990–1997. They added that the real value of government allocation for university education has continued to decline even as enrolment grew which has alternately affected the innovation scheme and managerial process of the institution and e-learning full utilization. Similarly, a study by Shelton (2017) on the challenges of introducing e-learning in primary Schools in Enugu State aimed at identifying major problems that hinder the introduction of e-learning in primary schools. The findings showed that there were inadequate and unreliable supporting infrastructures such as power supply, lack of trained manpower for e-learning, high cost of acquiring and operating e-learning services, cultural barriers, negative attitude of teachers and parents and lack of experts to handle e-learning programmes in primary schools.

Funds provided for e-learning facilities in the management of universities

The findings in this regard showed that funds to a low extent are provided for e-learning facilities in the management of universities in Rivers State. This is based on the fact that the government to a low extent provided funds for e-learning centres and e-libraries, government to a low extent allocated funds for e-learning facilities, to a low extent submit annual proposals for proper funding of e-learning, government to a low extent provided funds for equipment and materials needed for effective e-learning, and finally, government to a low extent ensured that e-learning facilities for schools are made available for use in the management of universities in Rivers State. However, the test of hypothesis revealed that there was a significant difference in the mean ratings of male and female lecturers on the extent funds are provided for e-learning facilities in the management of universities in Rivers State. Male and female lecturers differed in their opinion on the extent funds are provided for e-learning facilities in the management of universities in Rivers State. These findings agreed with the assertion of Ayemi and Babalola (2019) expressed the notion that the higher education sub-sector had suffered continuously from inadequate and poor funding. Besides, in support of the findings, Sanni (2016) asserted that e-learning has been inadequately funded in university education in Nigeria. The fact that funds allocation could not meet the university education needs was made obvious when the government requires each university to source at least 10% of its income through alternative sources. Such that the management would not have to look up to the government for solving all their financial problems, though



these alternative sources have been helping in meeting some of the institutional needs, a greater percentage of e-learning has been left un-utilized due to lack of funds or insufficient funds has posed a great challenge to e-learning in university management.

Extent e-learning facilities are maintained in the management of universities

The findings in this regard showed that e-learning facilities are to a low extent maintained in the management of universities in Rivers State. This is based on the fact that e-learning facilities are to a low extent annually maintained, e-learning facilities are to a low extent regularly maintained, maintenance department of universities to a low extent ensure routine e-learning facilities maintenance, e-learning facilities are to a low extent maintained according to manual prescription, and e-learning facilities are to a high extent maintained when they are faulty. The test of hypothesis revealed that there was a significant difference in the mean ratings of male and female lecturers on the extent e-learning facilities are maintained for the management of universities in Rivers State. This means that the respondents differ in opinion on the extent to which e-learning facilities are maintained for the management of universities in Rivers State. These findings agreed with that of Walson (2015) who noted that utilizing information and communication technology (ICT) resources is a contemporary responsibility area for school administrators like principals in the management of secondary schools in this technological era. The importance attached to school facilities like e-learning facilities as a vehicle for effective teaching and learning cannot be overemphasized. Therefore, proper utilization of facilities through an effective maintenance culture is a prime means of reducing the total cost of school operation and making the achievement of objectives effective and efficient for sustainable development.

Extent power is supplied for e-learning in the management of universities in Rivers State

The finding in this regard showed that power is of a low extent supplied for e-learning in the management of universities in Rivers State. This was based on the fact that power supplied for e-learning is was to a low extent regular in universities in Rivers State. The low power supply in universities in Rivers State significantly affects e-learning, dedicated lines for uninterrupted power supply are to a low extent provided to enhance e-learning in universities in Rivers State, power supply for e-learning in universities in Rivers State is highly interrupted, and finally, power supply for e-learning in universities is to a low extent frequent. The test of hypothesis showed that there was no significant difference in the mean ratings of male and female lecturers on the extent power is supplied for e-learning in the management of universities in Rivers State. The respondents were indifferent in their opinion on the extent to which power is supplied for e-learning in Universities in Rivers State. These findings agree with that of Chiaha (2013) who reported that the poor electricity supply in Nigeria is proving a major



impediment to the operations and growth of information and communication technologies (ICT) and e-learning in the nation's universities. Only a trickle of daily electricity production dribbles erratically into the country's 93 institutions rendering ICT systems dysfunctional. Universities, therefore, resort to diesel propelled generators, but they are expensive and environmentally unfriendly. Most times leave institutions with the choice of seeking alternative energy sources such as solar energy to accelerate ICT provision. Buttressing these issues, Trucano (2014) reiterated that the high cost of funding power supply in the Nigerian University due to the inadequate power supply from the National remains a bottleneck to the development of e-learning in Nigeria Universities in the public sector. The tertiary education system stands to benefit immensely from cutting-edge e-learning equipment stable power supply and an increased budget allocation for e-learning initiatives.

CONCLUSION

It is concluded from the findings of the study that the cost implication for e-learning in the management of universities in Rivers State is: cost of providing e-learning facilities, training e-learning personnel, maintaining e-learning facilities, providing the power supply, and cost of providing internet server. The cost is to a low extent provided in Rivers State universities for effective e-learning activities.

RECOMMENDATIONS

The following recommendations are made on account of the findings of the study.

1. *Budgetary provision for education in the state should be increased in line with the UNESCO stipulation to cushion the cost of e-learning.*
2. *Available funds should be properly managed by the university authority for the maintenance of e-learning facilities.*
3. *E-learning facilities should be regularly maintained to increase their durability.*
4. *Government should provide a regular power supply to the universities.*

REFERENCES

- Aljawarneh, S. A. (2019).** Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of Computing in Higher Education*. 3(4), 1-17.
- Ayemi, A.O. & Babalola, J.B. (2019).** Access, equity and quality in higher education. Nigeria: Nigerian Association for Educational Administration (NAEP) Publication.
- Chiaha, G.T & Nane-Ejeh, S.O. (2015).** Quality assurance indicators for school transformation: a paradigm shift. *International Letters of Social and Humanistic Sciences*, 42, 72-81.
<https://doi.org/10.18052/www.scipress.com/ILSHS.42.72>.



- Chiaha, G.T. (2013).** The utilization of e-learning facilities in the educational delivery system of Nigeria: A study of M-University. *International Journal of Educational Technology in Higher Education*, 15(34),13-27.
- Federal Republic of Nigeria (1997).** *Manual on university management*. National University Commission Press.
- Internet Society (2017a).** Internet for education in Africa: Helping policymakers to meet the global education agenda, sustainable development goal 4. Retrieved on 6-5-19 from <https://www.internetsociety.org>doc>
- Marcia, L.C. (1997).** *Medieval foundations of the western intellectual tradition*, 400-1400. Yale University Press.
- Momah, F.O (2016).** Availability and utilization of ICT in the management of Colleges of Education in South, Nigeria. Unpublished PhD thesis, Faculty of Education, University of Nigeria, Nsukka.
- Ocha, G. (2012).** The scope of educational administration. Success world Publishers. of Education, University of Nigeria, Nsukka, Enugu State, Nigeria.
- Ogunu, M.A. (2000).** *Introduction to educational management*. Mabogun Publishers.
- Okwo, F.A. (2019).** Teaching strategies and improvisation for global e-learning: special focus on developing economies. A keynote paper presented at an international conference/workshop on the future of teaching, learning and educational communications technology in the 21st century, Abuja, Nigeria, 22nd – 24th May 2019.
- Peretomode, V.F. (1996).** *Introduction to educational administration, planning and supervision*. Joja Educational Research and Publishers.
- Shelton, C. (2017).** The challenge of connecting schools to the internet in the developing world. Retrieved on 6-5-19 from <https://www.cfr.org>.
- The North Carolina e-learning (2019).** What is e-learning? Retrieved on 26-4-19 from <https://www.elearningnc.gov>.
- Tinio, V.L. (2012).** Information communication technology in education. Retrieved on 3/10/2017 from <http://www.ictnetworksystems.org>.
- Trucano, M. (2014).** How many schools are connected to the internet? Retrieved on 3-5-19 from <https://blogs.worldbank.org>.
- Walson, O.B.A. (2015).** Demographic and personality variables as correlates of principals' performance in the management of secondary education in South-South, Nigeria, Faculty of Education, University of Nigeria, Nsukka, Enugu State, Nigeria.

