Assessment of e-learning readiness of lecturers and students in federal colleges of education in North-East, Nigeria

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Abstracts

Delivery of instructions on line (e-learning) is trending globally especially in areas with security challenges like the North East, Nigeria. Teachers and students can no longer stay in the classrooms without fear of being attacked or kidnapped with attendant consequences on attrition rate and quality of products. This study investigated the e-learning readiness of lecturers and students in Federal Colleges of Education in the North East, Nigeria. The design of the study is descriptive survey. Four research questions and two hypotheses guided the study. The population comprised of 2100 lecturers and students from three accessible federal colleges of education in the North East, Nigeria. Taro Yamen sampling formula was used to determine the sample size of 336. Two instruments were used for data collection. They were Checklist and Questionnaire. Descriptive statistics and t-test were used for data analysis. The study found that e-learning facilities are available and the lecturers and students are ready but faced by many constrains. Recommendations were made based on the findings of the study.

Keywords: E-Learning Readiness; Lecturers; Students; College; Education; Nigeria

1. Introduction

1.1. Introduce the problem

The carrying capacities of Federal Colleges of Education (FCE) are not strictly observed by National Commission for Colleges of Education (NCCE) with the attendant

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result of over admission in many program areas. This large number of students can no longer be effectively handled by traditional delivery methods. Moreover, colleges of education sited in the Northeast geographical zone are currently facing insecurity challenges. Teachers and students can no longer stay in a classroom without fear of being attacked; this has led to the high rate of illiteracy and inequality to education when compared to other parts of the country (Nigeria). In this situation, e-learning may be a panacea.

Education worldwide is a complex process of socialization that transforms individuals into social being equipped with the necessary skills to participate fully in the dynamics of life. Education according to Nwana (2009), is the key that unlocks the door to all forms of development. It is also the process through which human being acquire life skills needed to develop and conquer their environment for a better living (Nzewi, 2010). Therefore, education is the process through which people foster desirable and relevant change in behavior and attitudes. For smooth running and implementation of educational policies, the Federal Government of Nigeria, [FGN], divided education systems into four different levels that include: Pre-primary Education, Primary Education, Secondary Education and Tertiary Education, (FRN, 2014). The Tertiary Education includes universities, colleges of education, polytechnics, mono-technics, including institutions offering correspondence courses, such as Open University.

Colleges of Education are tertiary institution established to producing professionally trained teachers for our grammar, vocational and technical secondary schools in Nigeria. There are federal colleges of education, state colleges of education and private colleges of education. These colleges can be classified into colleges of education technical, colleges of education non-technical and college of education (special). Colleges of Education Technical are established to train teachers in the area of vocational and technical education, aimed at providing trades and technicians for our industries, while Colleges of Education non-technical are established to train teachers in general education and colleges of education (special) are established to train teachers to teach students with learning challenges. According to Federal Republic of Nigeria FRN (2014), all colleges of education are supervised by the National Commission for Colleges of Education (NCCE).

Electronically delivered learning (e-learning) has become one of the important panaceas for equal access to quality higher education. It is efficient instructional method that improves teaching and learning. According to Sarah, (2005) E-learning refers to the use of electronic media for a variety of learning purposes, ranging from add-on functions in conventional classroom to full substitution for face to face meetings through computer interface or online. E-learning according to Ugwu and Aleke (2012), is the use of electronic technology to deliver education and training applications. The key benefit of e-learning is individualization. E-learning enables individualization of instructions by allowing learners to learn anytime and from every location across the globe at their own convenience through information and communication technologies such as computer, internet, teleconference, radio broadcast and interactive video among others, (Asogwa, 2006).E-learning can benefit any student irrespective of his background, as a result of enhanced learning opportunities provided by e-learning facilities, (Akinpelu, 2006).Considering the importance of accessibility and equality of education for all, the Federal Government of Nigeria included ICT/E-learning in education policy. The objective of the policy among others according to Osei (2007) is to integrate ICT/E-learning into the main stream of higher education institutions including colleges of education. Although, we have seen the need and the importance of e-learning in the zone, but the question is whether these colleges of education in the northeast are electronically ready for e-learning in terms of provision of e-learning facilities, training and possession of computer/internet skills

Electronic readiness (e-readiness) is simply a measure of the degree to which a community or group of people may be ready, willing or prepared to obtain the benefits arising from the use of e-learning and technology. Machado (2007), defined e-readiness as the "state of play" of a country's Information Technology (IT) infrastructure and the ability of its consumers, business and government to use Information and Communication Technology to their benefit. Schunk and AL-Huneid (2012) defined e-readiness as the degree to which an economy or community is prepared to participate in digital economy. E-readiness is often used to gauge or measure how ready a country, community, organization or person is ready to partake or participate in electronic activities such as e-learning and training. Government has made efforts to make ICT

facilities available for both administrative and academic activities in the colleges. It is saddening to observe that most of the administrative and academic activities appear to be carried out through traditional methods in colleges of education today. Therefore, this study intends to assess the extent to which these colleges of education are prepared or ready to use e-learning in their teaching and learning process.

Assessment is a diagnostic activity that helps one to determine the extent to which a system is able to meet its targets or objectives. Tremblay, et al (2012) described assessment as the gathering of evidence that would help to make decision to improve a programme, enhance students learning and development, and inform institutional decision making, planning, budgeting, or policy. Assessment of the e-learning readiness for this study refers to the extent to which colleges of education may be prepared or ready to use e-learning training and education in terms of students' readiness, lecturers 'readiness and availability of e-learning facilities.

Students are at the centre of any educational system. All other functions of the education sub-system are geared towards improving the learners. To maximally benefit from available e-learning facilities the learners must be ready. The learners need to be ICT compliant to use e-learning platform. The learners have to possess ability to browse to source materials, use e-mail, use forum, and download course work to be e-learning ready. Both the students and the lecturers without appropriate e-learning skills may no longer cope adequately in the 21st century learning environment.

Lecturers are employees in higher education institutions including colleges of education. Lecturers in colleges of education according to Ibrahim (2002) are academic staff with minimum qualification of first degree second class lower division and above. They are employed to teach relevant skills and knowledge in their area of specialization to students in the colleges. According to Smart (2009), research revealed that a number of lecturers in colleges of education appear not skilled to operate in the e-learning environment. Lecturers are expected to create forum, upload courses, and assess students, post comments, and blogs among others on e-learning environment for effective e-learning everybody involved both male and female need to be ready. Nzewi (2010) asserted that females are not inferior to male in intellectual capacity since there is no biological proof to that effect. However, there are doubts if the above is also true of e-

learning skills possessed by male and female lecturers in the COEs in the North East Nigeria. Designing and delivering courses in electronic formats required e-learning facilities.

E-learning facilities can provide training and education to large number of students with diverse cultural background and educational levels. There are different e-learning facilities ranging from basic ICT to e-learning management systems such as Moodle and Blackboard. Asogwa (2006) noted that e-learning tools include hardware, software and internet facility among others. From the above statements e-learning facilities can be viewed from the two perspectives; ICT and learning management systems. Therefore, e-learning facilities in the context of this work include information and communication technology ICT (software, internet and network) and learning management systems such as (Moodle and Blackboard). Although, National Commission for Colleges of Education (NCCE) did not provide any minimum standard on e-learning facilities for colleges of education, government and NGOs have made deliberate efforts to equip tertiary institutions including COEs in the country. E-learning facilities could give students, lecturers and researchers in developing countries the opportunity to bridge the knowledge gap between them and their counterpart in developed countries.

Despite the interest of higher institutions to use e-learning in teaching and learning process, there appear to be some constraints to the effective implementations. Some of these constraints may relate to insufficient funds, inadequate supply of electricity and e-learning facilities among others (Ololube, et al, 2007; Asogwa, 2018). It seems that the use of e-learning is still in its infancy in colleges as a whole. Although there is evidence of some facilities on their records, then, how far these colleges have availed themselves of the opportunities offered by e-learning in coping with complexities of instruction of over growing number of students is yet to be ascertained. Hence, the need to assess the extent of preparedness or readiness for effective integration of e-learning in colleges of education in North Eastern Nigeria becomes necessary.

1.2. Objective

Specifically, the study sought to assess the e-learning readiness of lecturers and students, availability of e-learning facilities, constraints and solution to the implementation of e-learning in colleges of education in the North east, Nigeria.

1.3. Research questions

The following questions guided the study:

1. What are the available of e-learning facilities of FCEs in the North East?
2. What is the e-learning readiness of male and female lecturers of FCEs in the North East?
3. What is the e-learning readiness of male and female students of FCEs in the North East?
4. What are the constraints to implementation of e-learning in FCEs in the North East?

What is the solution to constraints of e-learning in FCEs in the North East?

1.4. Hypothesis

The following null hypotheses were formulated for the study and tested at 0.05 level of significance'

1. There is no significant different between the mean scores of male and female lecturers on their e-learning readiness in FCEs in the North East.
2. There is no significant different between the mean scores of male and female students on their e-learning readiness in FCEs in the North East.

2. Method

2.1. Research design

The study employed a descriptive survey design because no variable used in the study was manipulated but were used as they have existed naturally, and conducted in Adamawa, Gombe and Yobe States all in the North East Nigeria.

2.2. Population of the study

Population of the study consisted of all the 2100 lecturers and students from the three federal colleges of education in Adamawa, Gombe and Yobe States; it consisted of 1,345 students and 755 lecturers respectively.

2.3. Sampling procedures and sampling size

Taro Yamen sampling formula was used to determine the sample size of 336.

2.3.1. Instrumentation

Two instruments were used for data collection. They were a checklist and a questionnaire. The checklist was designed by the researchers to obtain information on the availability of e-learning facilities in colleges of education. The checklist had 13 items and with the response modes of Available (A), and Not available (NA). Structured questionnaire titled "Assessment of E-leaning Readiness Questionnaire for Lecturers" (AERQL) and "Assessment of E-learning Readiness questionnaire for Students" (AERQS) was developed by the researchers in collaboration with experts in computer and computer maintenance. The AERQL had two sections, A and B. Sections A solicits information on personal data of the respondents while part B was built in five clusters. The instrument was face validated by threes experts. The Cronbach Alpha method was used to establish the reliability of the instrument. Reliability co-efficient indices of 0.80, 0.88, 0.82, 0.78, and 0.80 were obtained for clusters 1, 2, 3, 4 and 5 respectively and with the overall reliability co-efficient of 0.95.

2.3.2. Procedure for data analysis

The researchers and research assistants collected the data for the study. Descriptive statistics were used to answer the research questions while t-test was administered to analyze the hypotheses.

3. Results

3.1. Research question one

What are the e-learning facilities available in Federal Colleges of Education in the Northeast, Nigeria?

Table 1: Available e-learning facilities in Federal Colleges of Education in the North east, Nigeria.

S/N	ITEMS	F.C.E.(Tech) Gmb	F.C.E.(Tech) Pkm	F.C.E. Yola
1.	Internet connectivity	1	1	1
2.	Constant electricity	1	1	1
3.	Alternative power supply	1	1	1
4.	Microsoft office software	1	1	1
5.	CorelDraw software	X	1	X
6.	Photo shop software	X	X	X
7.	PDF converter	1	1	X
8.	Computer laboratory	1	1	1
9.	Classroom/auditorium connected to internet	1	1	1
10.	School website/portal	1	1	1
11.	Virtual classroom	X	1	X
12.	Moodle software	X	X	X
13.	Blackboard software	X	X	X
	Total	8	10	7

Key: 1=Available; x= not available

Data presented on Table 1 shows that there are 13 basic e-learning facilities required in each of the colleges. The data obtained showed the Federal College of Education (Tech) Gombe has items 1,2,3,4,7,8,9, and 10; Federal College of Education (Tech) Potiskum has items 1,2,3,4,5,7,8,9,10 and 11; while Federal College of Education Yola has items 1,2,3,4,8,9 and 10 respectively. The Table showed that out of 13 facilities F.C.E. (Tech) Gombe has a total of 8 facilities; F.C.E.(Tech) Potiskum has a total of 10 facilities; and F.C.E. Yola has total of 7 facilities. The data obtain also shows that each federal college of education in the northeast has more than 50% of the required basic e-learning facilities. This means that e-learning facilities are available in the colleges.

3.2. Research question two

What is the learning readiness of male and female lecturers of federal colleges of education in the north east, Nigeria?

Data collected in respect to this research question is presented in table 2.

Table 2: Mean Ratings and standard deviation of e-learning readiness of male and female lecturers.

S/N	Item Statements	Male lecturers N = 80			Female lecturers N = 25		
		$\overline{X}_1$	SD₁	DEC₁	$\overline{X}_2$	SD₂	DEC₂
15.	Navigate computer a lone	3.73	0.55	VHE	3.76	0.52	VHE
16.	Use word processing to prepare lesson	3.43	0.59	HE	3.20	0.65	HE
17.	Prepare power point slide for presentation on e-learning environment	3.36	0.79	HE	3.44	0.65	HE
18.	Use Excel spread sheet to prepare students results on e-learning environment	3.20	0.85	HE	3.08	0.76	HE
19.	Print file/document in e-learning environment	3.28	0.79	HE	3.20	0.82	HE
20.	Perform assignment activities in e-learning environment	3.36	0.72	HE	3.16	0.62	HE
21.	Download file/material online	3.34	0.73	HE	3.52	0.65	VHE
22.	Use e-mail in sending and receiving assignments	3.41	0.72	HE	3.12	0.88	HE
23.	Convert document to portable document format (PDF)	3.23	0.77	HE	4.96	7.98	VHE
24.	Login as user on e-learning environment	3.33	0.78	HE	3.24	0.52	HE
25.	Create data base on e-learning environment	3.24	0.79	HE	3.44	0.82	HE
26.	Use various search engines online	3.21	0.87	HE	3.36	0.76	HE
27.	Communicate online	3.18	0.89	HE	3.40	0.71	HE
28.	Upload course materials online	3.16	0.79	HE	3.32	0.75	HE
29.	Manage user access to online courses	3.26	0.79	HE	3.40	0.76	HE
30.	Coach on e-learning environment	3.09	0.92	HE	3.20	0.76	HE
31.	Assess students' performance on e-learning environment	3.20	0.82	HE	3.28	0.74	HE
32.	Can create forum and chat room on e-learning environment	3.19	0.83	HE	3.16	0.82	HE
33.	Play educational quiz on e-learning environment	3.16	0.82	HE	3.16	0.89	HE
34.	Post comments, blogs, etc on e-learning platform	2.93	0.96	HE	3.20	0.87	HE
	Cluster Mean	**3.27**	**0.44**	**HE**	**3.38**	**0.55**	**HE**

Result in Table 2 shows the mean and standard deviation of e-learning readiness of male and female lecturers. Result showed that the male lecturers had mean ratings of 3.73, 3.43, 3.36, 3.20, 3.28, 3.36, 3.34, 3.41, 3.23, 3.33, 3.24, 3.21, 3.18, 3.16, 3.26, 3.09, 3.20, 3.19, 3.16 and 2.93 with standard deviations of 0.55, 0.59, 0.79, 0.85, 0.79, 0.72, 0.73, 0.72, 0.77, 0.78, 0.79, 0.87, 0.89, 0.79, 0.79, 0.92, 0.82, 0.83, 0.82 and 0.96 while

female lecturers had mean rating of 3.76, 3.20, 3.44, 3.08. 3.20, 3.16, 3.52, 3.12, 4.96, 3.24, 3.44, 3.36, 3.40, 3.32, 3.40, 3.20, 3.28, 3.16, 3.16 and 3.20 with standard deviation of 0.52, 0.65, 0.65, 0.76, 0.82, 0.65, 0.65, 0.88, 7.98, 0.52, 0.82, 0.76, 0.71, 0.75, 0.76, 0.76, 0.74, 0.82, 0.89 and 0.87 respectively for items 15-34. The cluster means of 3.27 and 3.38 were obtained for the male and female lecturers respectively. The result shows high extent of e-learning readiness for the male and female lecturers in the study area.

3.3. Hypothesis one

There is no significant difference in the mean scores of male and female lecturers on the e-learning readiness

Table 3: t-test analysis of the mean ratings of male and female Lecturers on the e-learning readiness

S/N	Item Statements	Male $\overline{X}_1$	SD₁	Female $\overline{X}_2$	SD₂	df	T	Sig.	Dec.
15.	Navigate computer a lone	3.73	0.55	3.76	0.52	103	-0.28	0.78	NS
16.	Use word processing to prepare lesson	3.43	0.59	3.20	0.65	103	1.71	0.09	NS
17.	Prepare power point slide for presentation on e-learning environment	3.36	0,79	3.44	0.65	103	-0.44	0.66	NS
18.	Use Excel spread sheet to prepare students results on e-learning environment	3.20	0.85	3.08	0.76	103	0.63	0.53	NS
19.	Print file/document in e-learning environment	3.28	0.79	3.20	0.82	103	-0.41	0.68	NS
20.	Perform assignment activities in e-learning environment	3.36	0.72	3.16	0.62	103	1.27	0.21	NS
21.	Download file/material online	3.34	0.73	3.52	0.65	103	-0.12	0.27	NS
22.	Use e-mail in sending and receiving assignments	3.41	0.72	3.12	0.88	103	1.67	0.09	NS
23.	Convert document to portable document format (PDF)	3.23	0.77	4.96	7.98	103	-1.92	0.06	NS
24.	Login as user on e-learning environment	3.33	0.78	3.24	0.52	103	0.51	0.61	NS
25.	Create data base on e-learning environment	3.24	0.79	3.44	0.82	103	01.09	0.27	NS
26.	Use various search engines online	3.21	0.87	3.36	0.76	103	-0.76	0.44	NS
27.	Communicate online	3.18	0.89	3.40	0.71	103	-1.15	0.25	NS
28.	Upload course materials online	3.16	0.79	3.32	0.75	103	-0.88	0.38	NS
29.	Manage user access to online courses	3.26	0.79	3.40	0.76	103	-0.76	0.44	NS
30.	Coach on e-learning environment	3.09	0.92	3.20	0.76	103	-0.56	0.58	NS
31.	Assess students' performance on e-learning environment	3.20	0.82	3.28	0.74	103	-0.44	0.66	NS
32.	Can create forum and chat room on e-learning environment	3.19	0.83	3.16	0.82	103	0.14	0.89	NS
33.	Play educational quiz on e-learning environment	3.16	0.82	3.16	0.89	103	0.01	0.99	NS
34.	Post comments, blogs, etc on e-learning platform	2.93	0.96	3.20	0.87	103	-1.22	0.23	NS
	Cluster t	**3.27**	**0.44**	**3.38**	**0.55**	**103**	**-0.33**	**0.09**	**NS**

The result in table 3 showed the t-test analysis of male and female lecturers on the e-learning readiness. Result showed that there was no significant difference between mean ratings of male and female lecturers on items 15 to 34. This is because all the significant values were greater than 0.05 set as level of significance for testing the hypothesis. The cluster t-value of -0.33 with a degree of freedom of 103 and a significant value 0.09 showed that the result was not significant. This means hypothesis two which stated that there is no significant difference in the mean scores of male and female lecturers on the e-learning readiness is not rejected. This indicates that there is no significant difference between the mean score of male and female lecturers on the extent of e-learning readiness.

3.4. Research question three

What is the learning readiness of male and female Students of federal colleges of education in the North East, Nigeria?

Table 4: Mean Ratings and standard deviation of e-learning readiness of male and female students.

S/N	Item Statements	Male students N = 98 $\overline{X}_1$	SD$_1$	DEC$_1$	Female students N = 33 $\overline{X}_2$	SD$_2$	DEC$_2$
51.	Browse to source materials/information on e-learning environment	3.18	0.97	HE	3.30	1.05	HE
52.	Use e-mail to receive and summit assignments	2.89	0.89	HE	2.97	0.92	HE
53.	Carry out chatting on e-learning environment	2.68	1.01	HE	2.61	0.99	HE
54.	Download course work on e-learning environment	2.71	1.01	HE	2.97	1.02	HE
55.	Save typed file from computer to flash, CD and from them to computer	2.88	0.82	HE	2.91	0.84	HE
56.	Play quiz on e-learning platform	2.85	0.72	HE	2.78	0.74	HE
57.	Use college website / portal	2.63	0.92	HE	2.94	0.70	HE
58.	Chat with teachers on e-learning environment	2.74	0.98	HE	2.88	0.99	HE
59.	Use wireless connection	2.81	0.99	HE	3.00	1.03	HE
60.	Access my semester results on e-learning environment	2.60	0.97	HE	3.24	0.86	HE
61.	Use forum on e-learning platform	2.58	0.95	HE	3.00	0.94	HE
62.	Send feedback to my teachers on e-learning environment	2.60	1.17	HE	3.24	0.90	HE
	Cluster Mean	**2.76**	**0.45**	**HE**	**2.98**	**0.37**	**HE**

Result in Table 4 showed the mean and standard deviation of e-learning readiness of male and female students. The male students had mean ratings of 3.18, 2.89, 2.68, 2.71, 2.88, 2.85, 2.63, 2.74, 2.81, 2.60, 2.58 and 2.60 while the female students had mean

ratings of 3.30, 2.97, 2.61, 2.97, 2.91, 2.78, 2.94, 2.88, 3.00, 3.24, 3.00 and 3.24 respectively. Both the mean ratings are above 2.50, real limit of numbers on a 4 points rating scale and therefore accepted as a high extent. The cluster mean of 2.76 for the male students and 2.98 for the female students are to a high extent.

3.5. Hypothesis two

There is no significant difference in the mean scores of male and female students on the e-learning readiness

Table 5: t-test analysis of the mean ratings of male and female Students on the e-learning readiness

S/N	Item Statements	Male $\overline{X}_1$	SD$_1$	Female $\overline{X}_2$	SD$_2$	df	T	Sig.	Dec.
51.	Browse to source materials/ information on e-learning environment	3.18	0.97	3.30	1.05	129	-0.60	0.55	NS
52.	Use e-mail to receive and summit assignments	2.89	0.89	2.97	0.92	129	-0.39	0.69	NS
53.	Carry out chatting on e-learning environment	2.68	1.01	2.61	0.99	129	0.38	0.70	NS
54.	Download course work on e-learning environment	2.71	1.01	2.97	1.02	129	-1.26	0.21	NS
55.	Save typed file from computer to flash, CD and from them to computer	2.88	0.82	2.91	0.84	129	-0.12	0.89	NS
56.	Play quiz on e-learning platform	2.85	0.72	2.78	0.74	129	0.40	0.69	NS
57.	Use college website / portal	2.63	0.92	2.94	0.70	129	-1.74	0.08	NS
58.	Chat with teachers on e-learning environment	2.74	0.98	2.88	0.99	129	-0.67	0.49	NS
59.	Use wireless connection	2.81	0.99	3.00	1.03	129	-0.96	0.34	NS
60.	Access my semester results on e-learning environment	2.60	0.97	3.24	0.86	129	-3.36	0.00	S
61.	Use forum on e-learning platform	2.58	0.95	3.00	0.94	129	-2.19	0.03	S
62.	Send feedback to my teachers on e-learning environment	2.60	1.17	3.24	0.90	129	-2.86	0.00	S
	Cluster t	**2.76**	**0.45**	**2.98**	**0.37**	**129**	**-2.56**	**0.01**	**S**

The result in table 5 shows the t-test analysis of the significant difference in the mean scores of male and female students on the e-learning readiness. Result showed that there was no significant difference between mean ratings of male and female students on items 51 to 59. This is because the significant values were greater than 0.05 set as level of significance for testing the hypothesis. However, there was a significant difference between the mean ratings of male and female students for items 60 to 62. This is because the significant values were less than 0.05 level of significance. The cluster t-value of -2.56 with a degree of freedom of 129 and a significant value 0.01 showed that the result was significant. This means the hypothesis which stated that there is no significant difference

in the mean scores of male and female students on the e-learning readiness is rejected. This indicates that there was a significant difference in the mean scores of male and female students with respect to e-learning readiness.

3.6. Research question four

What are the constraints to e-learning implementation in colleges of education according to the lecturers?

The data collected with items 63-74 of the instrument which dwell on the constraints to e-learning implementation in colleges of education were used to answer research question 4. Data were analyzed using mean and standard deviation.

Table 6: Mean Ratings and standard deviation of Lecturers on the constraints to e-learning implementation in colleges of education

S/N	Constraints to effective e-learning implementation:-	N	$\bar{X}$	SD	Dec.
63.	Inadequate funding	290	3.35	0.85	HE
64.	Inadequate number of technical staff for maintenance	290	2.96	0.86	HE
65.	Inadequate trained and training of staff on the use of e-learning software	290	2.88	0.92	HE
66.	Inadequate ICT/e-learning infrastructure	290	2.55	0.94	HE
67.	High cost of e-learning	290	2.68	0.94	HE
68.	Limited access	290	2.73	0.92	HE
69.	Substandard facilities	290	2.75	0.91	HE
70.	Management attitude	290	2.67	1.03	HE
71.	Inadequate computer laboratory	290	2.80	1.01	HE
72.	Fear of displacement by e-learning technologies	290	2.60	0.97	HE
73.	Inadequate human resources and capacity building	290	2.68	0.91	HE
74.	Lack of virtual classroom	290	2.44	1.02	LE
	Cluster Mean	290	**2.73**	**0.48**	**HE**

Result in Table 6 showed the mean and standard deviation of respondents on the constraints to e-learning implementation in colleges of education. Result showed that the mean ratings for on items 63 – 73 are 3.35, 2.96, 2.88, 2.55, 2.68, 2.73, 2.75, 2.67, 2.80, 2.60 and 2.68 with standard deviations of 0.85, 0.86, 0.92, 0.94, 0.94, 0.92, 0.91, 1.03, 1.01, 0.97 and 0.91 respectively which are rated "High Extent'. The cluster mean score of 2.73 indicated that respondents rated the constraints all the items from 63-73 to a high

extent. This means all the items are constraints to e-learning implementation in colleges of education in northeast, Nigeria.

3.6.1. Research question five
What are the constraints to e-learning implementation in colleges of Education in Northeast, Nigeria according to the students?

Table 7: Mean Ratings and standard deviation of students on the solution to e-learning implementation in colleges of education

S/N	Solution to effective e-learning implementation:-	N	$\overline{X}$	SD	Dec.
63.	Adequate funding	290	3.35	0.85	HE
64.	Adequate number of technical staff for maintenance	290	2.96	0.86	HE
65.	Adequate trained and training of staff on the use of e-learning software	290	2.88	0.92	HE
66.	Adequate ICT/e-learning infrastructure	290	2.55	0.94	HE
67.	Adequate computer laboratory	290	2.68	0.94	HE
68.	Improve access to e-learning facilities	290	2.73	0.92	HE
69.	Adequate human resources and capacity building Provision of Constance electricity	290	2.75	0.91	HE

4. Discussion

With reference to the available e-learning facilities in Federal Colleges of Education, the result shows that most of the e-learning facilities are available in colleges of education. This finding is in agreement with Osei (2007) which states that the objective of the national policy on education among others is to integrate ICT/E-learning facilities in to the main stream of higher education including colleges of education. The findings also are in line with the findings of Akinpelu (2006), who found that availability of some e-learning facilities in Nigerian tertiary institutions shows that there is some consciousness of the significant role that e-learning can play in delivering educational service, even though it is not fully embraced by most of the higher education in Nigeria. However, the results of this study on the availability of e-learning facilities did not support the findings of Nwana, (2012) that there was acute shortage of e-learning facilities in most colleges of education.

The finding in respect of the e-readiness of male and female Lecturers indicates that items like navigate computer alone; download file/material online; convert documents to portable document format (PDF) among others, are utilized to a very high extent by both male and female Lecturers. That means that both male and female lecturers are highly ready for e-learning. This finding is in contrast to Smart, (2016)) who found a number of lecturers and students in colleges of education that lack the required skills for e-learning. However, the finding of the study in line with the finding of Kaur, and Abas, (2004) who discovered in their work that 97% of lecturers use computer for teaching while 91% used for sourcing information online.

The finding of the study indicated that browsing to source materials/information on e-learning environment; use of e-mail to receive and summit assignments; save typed file from computer to flash, CD and from them to computer; play quiz on e-learning platform are used to a high extent. The finding supports the work of Bokaye and Banini, (2008) who found that about 71% of the students under their study use computer during and after class. Computer has significantly changed the way students learn (Asogwa, 2018).

The finding of the study in respect of the constraints to effective e-learning implementation in colleges of education, showed that lecturers and students rate that Inadequate funding; Inadequate number of technical staff for computer maintenance; Inadequate training and retraining of staff on the use of e-learning software; Limited access; Substandard facilities; Inadequate computer laboratory and Inadequate human resources and capacity building are used to a high extent. The finding is in line with Ololube, et al, (2007) who found that the most significant of these constraints are insufficient funds, inadequacy of electricity and e-learning facilities among others.

The null hypotheses postulated that there is no significant difference in the mean scores of male and female lecturers and students on the e-learning readiness. According to the data analysed the result showed that there was no significant difference between the mean rating of male and female students and lecturers. This is because all the significant values were greater than 0.05 set as level of significant for testing the hypotheses. This means that hypotheses 1, and 2 which stated there is no significant

difference in the mean scores of male and female students and lecturers are not rejected. The finding is in line with Nzewi, (2010) who asserted that females are not inferior to male in intellectual capacity since there is no biological proof to that effect.

5. Conclusions

The following conclusions have been drawn from the major findings of the study. That lecturers and students are e-learning ready. There are e-learning facilities available in colleges of education in the North East. Gender is not a barrier to the e-learning readiness of both lecturers and students. The major factors posing serious constraints to effective implementation of e-learning in colleges of education in the North East are inadequate funding, inadequate trained and training of staff on the use of e-learning software, limited access, inadequate computer laboratory, substandard facilities and inadequate human resources and capacity building among others.

6. Recommendations

Based on the findings of this study, the following recommendations are made. Although there is appreciable number of e-learning facilities in federal colleges of education the government can still do more. For optimum utilization of those facilities, the government and college managements should encourage staff and students to keep updating their skills through periodic work shop, awareness campaign and regular training.

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