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## STRATEGIES FOR IMPROVING THE PROVISION OF E-LEARNING FACILITIES FOR TEACHING AND LEARNING OF AGRICULTURAL EDUCATION IN COLLEGES OF EDUCATION IN NORTH EAST ZONE NIGERIA

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### ABSTRACT

*This study was conducted to find out strategies for improving the provision of e-learning facilities for teaching Agricultural Education in Colleges of Education in the North-Eastern Nigeria. A research question and a null hypothesis was formulated to guide the study. Related literatures were reviewed to provide an in-depth knowledge on the major variable of this work. A survey research design was adopted for the study. The population of the study is 114 which comprised of 29 Procurement Officers and 85 Agricultural Education Lecturers in Colleges of Education in the North-Eastern Nigeria. Due to the manageable size of Procurement Officers and Agricultural Education Lecturers, the entire population was used for the study, hence no sampling was conducted. The structured questionnaire containing 15 items that were distributed for data collection, were 100% returned. Mean and standard deviation statistics were used to answer research question, Z-test was used to test null hypothesis at 0.05 level of significance. The findings of study revealed the strategies to be employed in improving the provision of e-learning facilities for teaching and learning of Agricultural Education in Colleges of Education. Based on the findings, it was recommended among others, that Colleges of Education Authorities should enter into partnership with National Communication Commission and Non-Governmental Organizations toward the provision of e-learning facilities*

### INTRODUCTION

Information and Communication Technology (ICT) has become a major tool in promoting teaching and learning globally. It has been identified as an indispensable instrument for development of quality teaching and learning in educational delivery. It is a fundamental aspect in preparation of students for future challenges of technological innovations in the global arena (Olofube, 2006) Pulkkinen (2007) stated that the application of ICT in education has dramatically reshaped

teaching and learning processes in higher education. There is need for the utilization of ICT facilities such as: computer, scanner, printer, internet, intranet, e-mail, video phone systems, teleconferencing devices, radio and microwaves, wireless application protocols (WAP), television and satellites, multimedia computer and multimedia projector in curriculum implementation (Nwana, 2012)

The application of ICT to education has given new approach to learning and curriculum delivery called

e-learning, with e-learning, there is shift from traditional approach of teacher-directed, dictated to modern methods where computer technology plays significant role thereby improving the quality, efficiency and effectiveness of teaching, learning, research and educational management. E-learning as a sub-system within ICT, is defined by Carry and Wills (2001) as a learning process delivered via electronic media, including the internet, intranet, satellite broadcast, audio-videotapes, interactive television and CD-ROM. E-learning involves the use of a computer or electronic device (e.g. mobile phone) in some way to provide training, educational or learning material (Stockley 2003)

Despite the obvious and enormous advantages associated with using ICT in teaching and learning, Torruam (2012) observed with great concern that several tertiary institutions in Nigeria are finding it difficult to effectively integrate ICT in teaching and learning. Among the difficulties are: inadequate qualified staff to support and implement e-learning systems, low motivation for lecturers to blend e-learning in face to face lectures, insufficient funds for the acquisition of ICT infrastructure, inadequate band width to support e-learning system, increased moral degradation coupled with increasing students' population. Okebukola (1997) observed that computers, smart board, data projector, digital camera, etc are not adequately available and are being much less utilized, therefore they are not part of classroom technology in most tertiary institutions in Nigeria. It was observed by the researcher that in COEs especially in the study area there are many impediments to effective utilization of e-learning facilities these include: shortage of qualified teachers who can use ICT tools in their teaching, qualified technologists who can support and maintain e-learning facilities, this makes it difficult for the staff and students overcome problem when ICT gadgets are down. Meanwhile, there is

insufficient fund for the procurement of e-learning facilities.

### ***Purpose of the Study***

- I. Find out ways of improving the provision of e-learning facilities for teaching and learning of Agricultural Education in Colleges of Education.

### ***Research Question***

The following research question was asked in this study:

- I. What are the ways of improving the provision of e-learning facilities for teaching and learning of Agricultural Education in Colleges of Education?

### **Hypothesis**

The following null hypothesis was formulated and tested at 0.05 level of significance:

- I.  $H_0$  There is no significant difference between the mean responses of lecturers and members of staff in the procurement department on the ways of improving the provision of e-learning facilities for teaching of Agricultural Education courses.

## **LITERATURE REVIEW**

### ***E-Learning Facilities in Colleges of Education***

The information and communication technology need of a college of education in this knowledge era goes beyond the assemblage of computers in a room called computer or ICT laboratory without internet connectivity and regular and uninterrupted supply of electricity. Even where the computers are connected to the Internet, it does not have the magic wand to transform the learning environment without a teacher with the Technological, Pedagogical and Content Knowledge (TPACK) to use them in the classroom situation (Onwuagboke, Singh and Fook 2015). Oguzor and Adebola (2011) considered the following as e-learning facilities: E-mail, CD-ROM

Packages, Video Phone Systems, Digital Library and Computer

### **E-mail:**

Another name for e-mail is electronic mail. Mail can be sent or received through e-mail without having both the participants at the same time. One can send and receive e-mail in any sector of the economy at all times. What it requires is that any person who has e-mail box has at least one e-mail address which is a cyber space equivalent of a post office address. Example of some e-mails sites are yahoo, Hotmail, Eudora, P. Mail etc. Binary information may be attached to the e-mail. Examples are pictures, sounds, word processor, files, and programmes. The use of e-mail can enhance teaching and instructional communication. This is because textual materials, pictures sounds, graphics, files and programmes can be sent to the learners. Also questionnaire can be sent for research purposes. In addition written projects, seminars, conference and workshop papers can be sent through e-mail and materials for teaching and learning and for tutorials. Using e-mail will enable learners have feedback from instructors more quickly than messages sent by postal mail. Learners can read messages at their convenience and can easily store them for later reference.

### **CD-ROM Packages:**

CD-ROM means compact Disk Read-only memory. It is a secondary storage disk and a product of ICT. Oguzor and Adebola (2011) explained that computer based learning involves the use of CD-ROM packages for teaching and learning. It can be used to store huge amounts of data like text books, periodicals, dictionaries, and encyclopedia. Ojo-Igbinoba (1995) pointed out that the biggest assemblage of library catalogue cabinets in the world now can be contained in a few compact discs (CD-ROM) of about 4.72 inches in diameter and 0.7 ounce

in a weight. The CD-ROM is found useful for academic purposes.

### **Video Phone Systems:**

Video phone systems are the use of video conferencing computers, effective and efficient telecommunication facilities for lecture delivery. It enables the instructor and learners see one another face to face in the screen and have classroom interaction electronically. In other words, it creates virtual classroom where the learner writes his own lesson notes using his own computers as the teleconferencing is going on. While educator must be sensitive to the teaching styles of teleconferencing in every tutorial session. In this manner, lecture delivery and instructional communication is done with relative ease. (Oguzor and Adebola, 2011)

### **Digital Library:**

With the internet, library can be visited online. Books of various sizes, journals, magazines, newspapers, can be read online. For instance, Daily sun newspapers can be read online at [www.sunnewsonline.com](http://www.sunnewsonline.com) with digital library, students will be able to get access to various books which may be useful for his or her lectures and researches.

### **Computer:**

A computer is an electronic device which is capable of accepting input data, processing the data, stores and retrieves the data when needed. Fuori and Gioia (1991) pointed that computer networks allow users in various geographical locations to share programmes, data and equipment.

### **METHODOLOGY**

The research design adopted for the study was survey research design. According to Sambo (2005) surveys are usually designed to find out the opinion of the people

in a given area towards an issue of interest to the generality of the populace in that area. The population comprises of 29 Procurement officers, 85 Agricultural Education Lecturers. Due to the manageable size of the population of Procurement Officers and Agricultural Education Lecturers, the entire population from the selected five Colleges of Education was used for the study therefore, no sampling was employed. Structured Questionnaire was used for data collection. The questionnaire named "Strategies for Improving the Provision of E-learning Facilities for Teaching and learning of Agricultural Education" (SIPEFTA) was developed by a researcher based on the consultation of literatures and experts in area to collect data from the Procurement officers and Agricultural Education Lecturers.

Draft copy of instrument was subjected to face and content validation. The validation was done by two experts from School of Technology and Science Education (STSE) Modibbo Adama University, Yola to establish the internal consistency of the instrument, trial test was carried out on five procurement officers and 20 Agricultural Education lecturers from Jigawa State College of Education, Gumel. The Cronbach Alpha coefficient of 0.75 was gotten for the instrument. The instrument for data collection was administered by the researcher to the respondents

## METHOD OF DATA ANALYSIS

Data collected from the respondents were analysed using statistical tools. Therefore, the data collected on research question was answered using mean and standard deviation while data collected for null hypothesis Z-test was used to test null hypotheses 1.

## RESULT PRESENTATION

### *Research question 1*

1. What are the ways of improving the provision of e-learning facilities for teaching of Agricultural Education in Colleges of Education?

Table 1 indicated that 12 out of the 15 items were agreed by the respondents as indicated by their mean except items 8, 11 and 12, the mean ratings range from 3.04 to 4.30 while the standard deviations are relatively low ranging from 0.002 to 0.13 this implies that the responses of the respondents is cluster around the mean. The grand mean was 3.70 which ranked above the cut-off point of 3.50. The result from table 7 indicated that the respondents were of the opinion that proposed strategies would help in improving the provision of e-learning facilities for teaching and learning of Agricultural Education in Colleges of Education.

**Table 1:** Mean Responses of Respondents on Strategies that would Improve the Provision of E-learning Facilities for Teaching of Agricultural Education n=114

S/NO	STRATEGIES	$\bar{X}$	SD	RMK
1	Allocation of adequate funds by college authorities can enhance the supply of e-learning facilities in the Colleges of Education.	4.30	0.11	A
2	Updating digital library can enhance lecturers and students to get access to various e-books.	4.12	0.06	A
3	To improve the supply of e-learning facilities, funding should be treated as an individual line item in the school budget.	3.62	0.05	A
4	Use of internally generated revenue to fund ICT centres can improve the availability	3.52	0.20	A

	of e-learning facilities.			
5	Sensitization of private sectors to actively involved in the funding of ICT centres can enhance the supply of e-learning facilities.	3.65	0.12	A
6	Mobilization of Non-Governmental Organizations (NGOs) to contribute to the supply of e-learning facilities ensures successful implementation of e-learning in the colleges.	3.80	0.002	A
7	Encouragement of philanthropists to donate funds can enhance the supply of e-learning facilities in the colleges.	3.70	0.06	A
8	Exploitation of community education funds to provide e-learning facilities.	3.04	0.05	D
9	Facilitation of public-private partnership to mobilize resources can support the provision of e-learning facilities.	3.62	0.05	A
10	Obtaining funds from private grants, business and government can help to procure e-learning facilities in the colleges.	3.69	0.003	A
11	Sourcing loan from banks can help in the supply of e-learning facilities in the Colleges.	3.19	0.33	D
12	Provision of equipment through leasing schemes can improve the supply of e-learning facilities in the colleges.	3.43	0.06	D
13	Accessing special grants from the TETFUND can enhance the supply of e-learning facilities in the colleges.	4.22	0.08	A
14	Procurement Of ICT Equipment And Facilities For Effective Educational activities from companies that have good reputations can improve the supply of e-learning facilities.	3.77	0.13	A
15	Provision of low-cost but standard e-learning ensures the availability of e-learning facilities.	3.80	0.007	A
<b>Grand mean</b>		<b>3.70</b>	<b>0.08</b>	

### ***Hypothesis***

H<sub>01</sub> There is no significant difference between mean responses of Agricultural Education Lecturers and Procurement Officers on the ways of improving the provision of e-learning facilities for teaching of Agricultural Education courses.

Z-test was used to test this hypothesis at 0.05 level of significance. Table 13 presents the Z-test results of this hypothesis. The result revealed that Z calculated was -1.73 which was less than critical value of Z which is  $\pm 1.96$ . This implies that significant difference does not exist between mean ratings of Lecturers and Procurement officers on the ways of improving the provision of e-learning facilities. Therefore, null hypothesis was accepted.

**Table 2:** Z-test Analysis of Mean Responses of Agricultural Education Lecturers and Procurement Officers on Strategies that would Improve the Provision of E-Learning Facilities for Teaching of Agricultural Education.

GROUPS	N	$\bar{X}$	Z-cal	Z-crit	REMARK
Lecturers	85	3.81	1.73	1.96	Accept $H_0$
Procurement Officers	29	3.58			

### FINDINGS OF THE STUDY

Strategies below were identified to improve the provision of e-learning facilities for teaching of Agricultural Education:

- (a) Allocation of adequate funds by college authorities can enhance the supply of e-learning facilities in the Colleges of Education.
- (b) Updating digital library can enhance lecturers and students to get access to various e-books.
- (c) To improve the supply of e-learning facilities, funding should be treated as an Individual line item in the school budget.
- (d) Use of internally generated revenue to fund ICT centres can improve the availability of e-learning facilities.
- (e) Sensitization of private sectors to actively involved in the funding of ICT centres can enhance the supply of e-learning facilities.
- (f) Mobilization of Non-Governmental Organizations (NGOs) to contribute to the supply of e-learning facilities ensures successful implementation of e-learning in the colleges.
- (g) Encouragement of philanthropists to donate funds can enhance the supply of e-learning facilities in the colleges.
- (h) Exploitation of community education funds to provide e-learning facilities.

- (i) Facilitation of public-private partnership to mobilize resources can support the provision of e-learning facilities.
- (j) Obtaining funds from private grants, business and government can help to procure e-learning facilities in the colleges.
- (k) Sourcing loan from banks can help in the supply of e-learning facilities in the Colleges.
- (l) Provision of equipment through leasing schemes can improve the supply of e-learning facilities in the colleges.
- (m) Accessing special grants from the TETFUND can enhance the supply of e-learning facilities in the colleges.
- (n) Procurement of ICT Equipment and Facilities for Effective Educational activities from companies that have good reputations can improve the supply of e-learning facilities.
- (o) Provision of low-cost but standard e-learning ensures the availability of e-learning facilities.

### DISCUSSION OF FINDINGS

The findings of the study revealed that all the fifteen strategies proposed including: allocation of adequate funds by college authorities, updating digital library, use of internally generated revenue and sourcing of loan from banks etc. can enhance the supply of e-learning facilities. On a general note, the grand mean of data indicated that all the respondents agreed with the strategies. This finding is in conformity with Dada and

Dada (2008) who stated that most of the Nigerian Educational institutions are still in the emerging and applying phases. ICT in education is therefore in its infancy stage in Nigeria. They stressed that there is great need for government, industries and philanthropists to partner to provide the needed ICT tools and infrastructure for the nations educational institutions. The finding also agrees with Madu and Laura (2011) whose findings revealed that e-learning facilities were inadequate and students' access to these were negligible. They recommended that government should increase financial resources available to the institutions especially in the area of e-learning facilities.

## CONCLUSION

The study made a major finding that need to be highlighted as conclusion which college authorities should consider as a matter of concern. All the respondents had agreed with the proposed strategies that would improve the provision of e-learning facilities.

## RECOMMENDATIONS

The following recommendation have been made based on the finding of the study.

1. The College Administrators should put in place the strategies identified to improve the provision of e-learning facilities for teaching of Agricultural Education. Specifically, enter into partnership with Government Agencies like NCC and non-governmental organizations to contribute to the supply of e-learning facilities in the Colleges.

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