GLOBAL RESEARCH NETWORK
ONLINE RESEARCH HUB

AMERICAN JOURNAL OF ECONOMICS AND BUSINESS MANAGEMENT

ISSN: 2576-5973
Vol. 7, No.2, February 2024

Use of Information and Communication Technology in Teaching and Learning of Economics in Colleges of Education in North Central States, Nigeria

Okekwu Ate Musa, Aliyu Mubarak
Department of Economics, Federal Collage of Education Odugbo, Benue State

Abstract: The main purpose of this study was to find out the use of Information and Communication Technology in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria. The study was guided by two purposes, two research questions and two null hypotheses. The researcher adopted descriptive survey research design. The study was carried out in North Central States, Nigeria. The population comprised One Hundred and forty (140) Economics Lecturers and Eight Hundred and seventy Nine (879) NCE III students from selected (6) Colleges of Education in North Central States. Stratified sampling technique was used to draw a sample size of 114 NCE III students and the One Hundred and Forty (140) lecturers were retained. Observation Checklist on Available ICT Facilities for Teaching and learning Economics and a structured questionnaire were used for data collection. The reliability of the instrument was ascertained using Cronbach Alpha and an overall reliability coefficient of .97 was ascertained. Frequency, percentage, mean and standard deviation were used to answer research questions while independent sampled t-test was used to test null hypotheses at 0.05 level of significant. The findings of this study revealed that available ICT equipment used in teaching and learning of Economics are internet connected to desktop, Cyber café, virtual library, computer library, Overhead transparency, white board, smart board, Loud speaker, Printers and Magnetic disc. Based on the findings of this study, recommendation and suggestion for further studies were made.

Introduction

Education is an essential agent of transformation and the foundation of industrial development as well as socio-economic growth. Education can be said to be the greatest venture a country can undertake for the swift growth of its socio-political, technology, human and material resources. The unique power of education acts as a catalyst for wider development goal of any nation. The development goal can only be fully realized, if education is equitable beyond mere enrollment or completion rates but to meet the Sustainable Development Goals (SDGs). It is therefore vital that nations' priority should be on the quality of learning and instruction in the classroom throughout the education lifecycle (Global Monitoring Report, World Bank, 2015). To meet up with the SDGs through the power of education is a serious financial investment which is currently beyond the reach of developing country like Nigeria but innovative solutions such as those offered by Information and communication technology (ICT) can

help in closing the gap (United Nations Educational, Scientific and Cultural Organization((UNESCO, 2014).

In the past, teachers have been considered as reservoir of knowledge. This implies that students sitting in the class and listing to the teacher who is directing and passing the information to the audience (students) via the chalkboard, while the student may take their own note and listen passively. This mode of teaching is not encouraging anymore. Nowadays teachers are regarded as facilitator and their major role is to help the student to learn on their own with little guidance. Student are organize in groups and each group doing something different from the other, while some are engaged in writing task some are engage practical activities, some may be in the class and some outside the class using professional equipment, finding something in the library. This learning process is individualizes because student may be at different stages in the task which suit individual abilities and competence. However, with advancement in science and technology, the world is moving at a very fast speed (Zare-ee, 2011) . Importantly, technology involves information and communication which may be seen as the gathering and processing of information for use by way of communication and electrical equipments such as computer, cameras, telephones, etc (Ozoji, 2003). Akbay (2005) defined Information and communication technology as a broad term that encompasses any communication equipment or appliances/application ranging from radio tape, hardware and software, satellite system, television, phones, network and computer etc, also the different activities and function related with them, such as distance education and use of video-conferencing. These electronic systems can be employed for transmitting, telecommunications and various types of computer assisted communications including teaching and learning in a classroom. Adoni (2010) noted that Information and communication technology centered education covers the application of computers, optical fiber technologies, on-line self-learning packages, satellites, radio, interactive CDs, tele-presence systems and all types of information technology hardware and software in learning and instruction

In this context Information and Communication Technologies: refers to electronic devices which including computes, telecommunication and audio-visual systems that help in the collection, processing, transportation and delivery of information and communication services to users.

The use of technologies to information management, production, amassing, processing, recollecting, transmitting and so on. is essential in this digital era. Hence, the use and application of information and communication technology in the learning and teaching is at the centre stage of discussion and issues of concerned in current day educational programme and policies. (Thierer, 2002). The need for the application of information and communication technology in learning and instruction is helpful for training students and staff to be totally engaged and be creative members of a globe that has been in existence and will keep on moving by technology (Gregorian, 2002). In relation, Gregorian states that roughly every facet of learning, from investigation to distribution of information or ideas has been affected by technology in the humankind of tertiary education. It means that through information and communication technology, it is likely to immediately view important idea and information that will improve learning and teaching of Economics through internet (Bakac 2011).

Economics is among the subjects offered in Colleges of Education in Nigeria by students. According to Dwivedi (2004) Economics is the study of how people make a choice on what is to be produce, how it should be produced and for whom to produce goods which are material commodities like steel, strawberries and render service which are activities such as message or life performance guzzled or take pleasure in only at the moment they are manufactured or produced. He went further to say that the question of what, how and for who to produce is either answered by a central planning agency or the price mechanism depending on the economic system practiced by a country. Also, Davies (2003) sees economics as the study of how man allocates limited resources among alternative wants. The specific

objectives of Economics as outlined by The Federal Republic of Nigeria (FRN, 2004), include furnishing students with the basic ethics of Economics necessary for useful living and higher education; preparing/encouraging students to be wise, efficient and clever in the administration of limited resources; and increase value for the dignity of effort and their admiration of socio-economic, and cultural value of the society. In view of this research work Economics is the study and management of scarce resources. While Economics teacher is a person who studies Economics at university level and teaches economics subject, especially one employed by a school.

The College of Education is the unit of tertiary education in Nigeria saddled with the responsibility of training teachers to obtain non-degree but qualitative professional certificate in education. The origin of Nigeria Colleges of Education dates back to the 1950s. In the report of Ashby Commission of 1959, it is evident that there was a need to provide middle level teacher to meet Nigerian desires in the area of teaching manpower. It was observed that many teachers were not certificated and trained. This observation was followed by a suggestion for greater expansion of intermediate education for intermediate teachers, which was targeted at upgrading the existing teaching force (Isiyaku, 2007). The commission recommended the establishment of Advanced Teacher Training Colleges (A.T.T.C's) in Nigeria. The recommendation led to the founding of ATTC'S at Owerri, Ondo, Lagos and Zaria between 1961 and 1962; Kano in 1964 and Abrakain 1968, with both institutions named Colleges of Education (Isiyaku, 2007). The Advanced Teachers Colleges (ATCs) according to Isiyaku (2007) turned out graduates who obtain Nigeria Certificate in Education (NCE), a nondegree but qualitative professional certificate in education.

The review of the NCE curriculum has selected computer education as mandatory. In the new national curriculum that was launched in October 2010, all Colleges of Education students are expected to achieve minimum technology standards as a mandatory component in pre-service programmes. However, lecturers in the colleges of education has been identify as key players in developing ICT skills in students by the National Commission for Colleges of Education. Hence, literacy and proficiency in ICT have been made compulsory for all lecturers in Nigerian Colleges of Education since 2004/2005 academic session. Lecturers in these colleges are required to incorporate ICT into their classroom activities. ICT proficiency is the ability of lecturers to use ICT properly to access, administer, incorporate and appraise information, develop new understanding, and communicates with other in orders to contribute effectively in the society (Ministerial Council on Education, Employment, Development, and Youth Affairs, MCEECDYA, 2008).

Evidences abound that ICT facilities can be used to effectively facilitate teaching and learning. Report on effective use of ICT facilities in teaching and learning of Economics in colleges of education in north central states however remains unknown. Noteworthy, the presence of ICT technology and facilities alone will not stimulate significant changes in learners without a teacher. Teachers are important in the implementation of ICT policies in education. Without the teachers, students may not be able to effectively enjoy available potentials inherent in ICT on their own. Teachers need to actively engage the use of ICT in teaching and learning, for teachers and learner to effectively do this; they need to have the requisite skill needed in use of ICT facilities.

Also, there is dearth of evidence on ability of Economics teachers and learners to teach and learn using ICT facilities. Gains inherent in using ICT facilities to support learning (of Economics) in the classroom are many. On the basis of the foregoing, the researcher is concerned with finding out the extent of use of information and communication technology equipment in teaching and learning of Economics courses in Colleges of Education in North Central State, Nigeria.

Purpose of the Study

The specific objectives are to:

1. Find out the purpose of use of ICT facilities for teaching and learning of Economics in Colleges of Education in North Central States, Nigeria
2. Identify the ICT facilities applied for teaching and learning of Economics in Colleges of Education in North Central States,

Research Questions

The following research questions guided the study:

1. What are the purpose of the use of ICT facilities in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria?
2. What are the ICT facilities applied in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria?

Methodology:

The researcher adopted a descriptive survey design. The area of study consist of all the North Central State comprising of Plateau, Niger, Kwara, Benue, Kogi, Nassarawa, and Federal Capital Territory. Within the state the study is also delimited to Colleges of Education in North Central State, Nigeria. The population of this study comprised all the Economics lecturers and the NCE III students in six Colleges of Education in the North Central State of the Nigeria, The population consist of One Hundred and Eighty Nine(189) Economics Lecturers and One Thousand Two Hundred and Three (1203) NCE III students from six (6) Colleges of Education in North Central State with a sample size of three hundred and nine (309) respondents which are 189 lecturers and 120 NCE III students. The 189 lecturers in the population were retained, while ten percent (10%) of the NCE III students was used.

The instruments used in gathering data for this study is a structured questionnaire. The questionnaire was adapted and necessary modification made to suit the study area. Section A of the instrument contain personal information of the respondents, while section B contain thirty (30) items aim at enquiring about different issues on the research questions. The items will be closed ended. They are placed in 4-point rating scale and two point rating scale of Strongly Agree (SA), Agree (A). Disagree (D) and Strongly Disagree (SD), Very High Extent (VHE), High Extent(HE), Low Extent (LE) Very Low Extent (VLE) and Available (A), Not Available (NA) respectively which will be scored as follows: SA=4, A=3, D=2, SD=1. And A=2, B=1

To ensure the face validity of the questionnaire, the researcher submitted the drafted questionnaire items to two senior lecturers in Measurement and Evaluation department and one senior lecturer in Social Science Education Department of University of Nigeria, Nsukka. The questionnaire items were subjected to thorough scrutiny and proof reading by these experts to ensure that its contents were in line with the research questions.

In order to ascertain the reliability of the questionnaire, a pilot study was conducted. A pilot study was carried out with fifteen (15) lecturers and Fifteen (15) NCE III students of Economics Department, College of Education Osugbe, Enugu State. The internal consistency of the instrument was ascertained by using Cronbach Alpha. an overall reliability of .97 for the two clusters used for the research work was found, indicating that the instrument is reliable. Cronbach Alpha reliability coefficient was desired appropriate to establish the reliability of the instrument because the items were dichotomously scored.

Results

Research question 1: What are the purpose of the use of ICT facilities in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria?

Table 1: mean ratings and standard deviations of the purpose of the use of ICT facilities in teaching and learning of Economics in Colleges of Education

S/N	Items	Respondents	Mean	Std. Deviation	Remarks
1	To search for Information on selected topic in Economics using Google Search Engine	Lecturers	3.02	.724	Agreed
		Students	2.97	.710	Agreed
2	To guide the student using computer system to draw chart and table	Lecturers	3.28	.612	Agreed
		Students	3.24	.628	Agreed
3	To perform simple arithmetic on a selected topic in Economics	Lecturers	3.18	.780	Agreed
		Students	3.18	.790	Agreed
4	To download from the download option on the internet	Lecturers	3.56	.648	Agreed
		Students	3.51	.668	Agreed
5	To design a lesson plan in Economics using a computer	Lecturers	3.31	.832	Agreed
		Students	3.30	.830	Agreed
6	To search information on project topic and typing of the project	Lecturers	3.36	.759	Agreed
		Students	3.30	.763	Agreed

Table one is the result of the opinions of the respondents on the purpose of the use of ICT facilities in teaching and learning of Economics in Colleges of Education. In this cluster, the six items that were administered to the respondent were all accepted by both Lecturers and students as the mean ratings were above 2.50 benchmark with moderate standard deviations which shows moderate variability of scores. Therefore, Lecturers and students agreed that ICTs facilities are useful in teaching and learning especially in searching for information, draw chart and table, perform simple arithmetic's, download data, design lesson plan search for project topics.

Research question 2: What are the ICT facilities applied in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria?

Table 2. Mean ratings and standard deviations of the ICT facilities applied in teaching and learning of Economics in Colleges of Education.

S/N	Items	Respondents	Mean	Std. Deviation	Remark
1	Internet connected Desktop Computers	Lecturers	3.46	.772	HE
		Students	3.41	.785	HE
2	Internet Connected Laptop	Lecturers	3.20	.797	HE
		Students	3.21	.803	HE
3	Institutional/Departmental Cyber café	Lecturers	3.00	.857	HE
		Students	2.96	.856	HE
4	Institutional Virtual Library	Lecturers	3.25	.669	HE
		Students	3.26	.679	HE
5	Departmental Computer library	Lecturers	3.22	.857	HE
		Students	3.21	.867	HE

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6	Computer networking (Local Area Network)	Lecturers	3.31	.750	HE
		Students	3.32	.768	HE
7	Computer networking (Wide Area Network)	Lecturers	2.19	.934	LE
		Students	2.01	.840	LE
8	Overhead projector	Lecturers	3.01	.720	HE
		Students	3.06	.756	HE
9	Overhead transparencies	Lecturers	3.36	.722	HE
		Students	3.33	.725	HE
10	White board	Lecturers	3.16	.986	HE
		Students	3.11	.999	HE
11	Electronic class roll (ECR)	Lecturers	1.63	.567	LE
		Students	1.58	.578	LE
12	Multimedia classroom (Audio visual centre)	Lecturers	2.80	.858	LE
		Students	2.70	.841	LE
13	Smart board	Lecturers	3.34	.737	HE
		Students	3.36	.718	HE
14	Computer screen reading software	Lecturers	1.55	.567	LE
		Students	1.61	.589	LE
15	Loud speaker	Lecturers	3.07	.949	HE
		Students	3.07	.975	HE

Table 2 above described the opinions of the Lecturers and students on the application of ICTs facilities in teaching and learning of Economics in colleges of education. In this cluster, item 1, 2, 3, 4, 5, 6, 8, 9, 10, 13 and 15 with mean ratings are above 2.50 with respective moderate standard deviation were used to high extents. Item 7, 11, 12, and 14 with mean ratings of below 2.50 and with corresponding standard deviation were used to low extent by Lecturers and students. In other words, Lecturers and students identified that computer networking, , electronic class roll, multimedia classroom and computer screen reading software were used to low extent.

Discussion

Purpose of the use of ICT facilities in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria

The Findings of this study showed that Lecturers and students agreed that ICTs facilities are used in teaching and learning especially in searching for information, draw chart and table, perform simple arithmetic's, download data, design lesson plan and search for project topics. The respondents' agreement to usefulness of ICT for searching information and download could be attributed to their quest for online resources for projects and journal publication. The usability for drawing tables and chart, perform simple arithmetic and design lesson plans could be because ICTs makes it less stressful. In conformity with this finding, Cox, Preston, and Cox, (1999b) found that ICT makes learning to be more interesting, more diverse, increases learning, improves presentation of materials as well as increases motivation amongst students. This finding is also inconsonance with Ajayi and Ekundayo (2009) revealed the perceived benefits of using ICT in schools which include making teaching-learning interesting; helping the distance learning programme; helping teachers to be up-to-date; enhancing quality of work by both the teachers and the students.

ICT facilities applied in teaching and learning of Economics in Colleges of Education in North Central States, Nigeria

The Findings of this study showed that Lecturers and students identified that institutional virtual library, computer laboratory, computer networking, overhead transparencies, electronic class roll, multimedia classroom, smart board, computer screen reading software and loud speaker were applied to low extent. This could be as a result of inadequate ICT instructional materials or lack of manpower to implement Economics contents in the classroom with the aid of ICT. In agreement to this finding, Adelabu and Adu (2014) revealed that biological science teachers in these schools do not also have the proper skills required to utilize ICT for effective teaching of the subject. This finding is also in line with Ajayi and Ekundayo (2009) who revealed that ICT facilities were lacking in schools and teachers and students were to a little extent exposed to the use of ICT.

Conclusion

Information and Communication Technologies plays vital role in teaching and learning process in different colleges of education. It refers to all electronic devices which including computers, telecommunication and audio-visual systems that help in the collection, processing, transmission and delivery of information and communication services to Lecturers and students. The findings of this study have shown that majority of ICT facilities which play vital role in academic activities are not available and some of the available ones, lecturers do not possess the potential skills to efficiently utilize the facilities. The respondents enumerated various challenges that contribute to the hindrance of efficient utilization of ICT facilities and strategies that could help to increase efficient use of ICT facilities in teaching and learning Economics in colleges of education in North Central States, Nigeria. In nutshell, ICT facilities are not available to high extent; lecturers and students do not possess the required skills to efficiently use the available ICT facilities and Lecturers and students encounter numerous challenges while using ICT in teaching and learning.

Recommendation

Based on the findings, the following recommendations were made:

1. Ministry of education should provide the required ICT facilities in colleges of education in North Central States, Nigeria. This can be done through frequent visit to colleges of education by the National Commission for Colleges of Education to assess the States of the art as regards the availability of ICT facilities and make necessary recommendation to the Federal Ministry of Education
2. Professional Bodies like International Association for Economics Educators should provide in-service training, workshops and conferences for Economics teachers and students on usefulness of ICT facilities for teaching and learning.
3. States and federal government should provide social amenities in school to enhance the effectiveness of ICT in teaching and learning of Economics.
4. Curriculum planners should emphasis more on integration of ICT facilities on instructional delivery of Economics contents.
5. States and federal government should recruit teachers who have ICT skill in teaching and learning of Economics at colleges of education in North Central.

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