AVAILABILITY OF INTERECTIVE AND NON-INTERECTIVE INFORMATION AND COMMUNICATION TECHNOLOGY FACILITIES FOR INSTRUCTIONAL DELIVERY OF BUSINESS EDUCATION COURSES IN COLLEGES OF EDUCATION IN NORTH-WEST, NIGERIA

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Abstract

The study was conducted to determine the availability of information and communication technology (ICT) facilities in the instructional delivery of business education courses in colleges of education in the North-West, Nigeria. The study adopted descriptive survey design. The population and sample of the study comprised 243 business educators in ten colleges of education in the study area; no sample was made as the population was manageable. The checklist with a two-point rating scale was used in the collection of data. The instrument was validated, and tested for reliability using the split-half statistic and it yielded a reliability coefficient of 0.86. Data collected were analyzed using frequency counts and percentages to answer the research questions and chi-square to test the hypotheses. The findings of the research questions revealed that most of the interactive and non-interactive ICT facilities were available and utilized in instructional delivery for business education Courses. The results revealed that the availability of interactive and non-interactive ICT facilities did not depend on location and gender of the respondents. The educational implication of the study is that ICT facilities used for instructional delivery of business education courses are suitable in colleges of education in North-West Zone, and are user friendly irrespective of gender in facilitating teaching and learning. It was also recommended that colleges in urban and rural areas in the North-West, Nigeria, should be encouraged to utilize the available interactive and non-interactive ICT facilities for instructional delivery of business education courses. Business educators should be regularly trained to utilize modern ICT facilities for effective delivery of instruction.

Keywords: Interactive, Non-interactive, ICT, Instructional Delivery

Introduction

Information and communication technology (ICT) is a global connection of many different types of computer networks linked together. Anderson and Glem (2003) referred to ICT as those technologies that are used to access, gather, manipulate and present or communicate information. They include hardware, e.g. computers and other devices like printers, scanner and others, and software applications, connectivity; access to the internet, local networking infrastructures and video conferencing. ICT essentially entails collating, analyzing, processing, manipulating, storing, retrieving, transmitting and communicating data in different forms, which may include audiovisual, audio, and visual formats. This broad definition of ICT includes interactive technologies such as graphics tablets, interactive digital smart board, smart podium, document camera, E-reader, screen beam, short-throw display, flexible hand pointer, and non-interactive such as calculators, fax machine, printers, scanners, flash drive, photocopies, CD-ROM, slide projector, and television (UNESCO, 2002).

The implication of this is that ICT places different demands on education in general and business

education in particular. Therefore, the concern over how business education curriculum is delivered in Nigerian colleges of education in contemporary times becomes important if our educational system is to be relevant to serve the societal needs in the present age of information. The integration of information technology in teaching is a central matter in ensuring the quality of business education courses. There are two important reasons for integrating ICT into the teaching and learning of business education.

Firstly, students would become familiar with the use of ICT, since most jobs in society today are dependent on ICT. Secondly, the teaching of business education courses utilizing ICT resources will improve the quality of business education graduates, thereby making them more effective and efficient in various places of work. ICT is seen as one part of education technology that pays attention to concepts, utilization and application in the educational process. This in turn requires a rethinking and pedagogical re-engineering of the classroom environment and its components. This would, to a large extent, provide opportunities for proactive learning processes that should be based on cooperative values. It can be utilized in a classroom setting to enhance curricula relevance and adoption in the education system.

Globally, the nature of teaching and learning is changing rapidly due to increased interaction from more accessible global telecommunication networks driven by the content of the internet. With the increasing capacity of information and communication technology, there is a rise in new learning opportunities beyond the traditional book-teacher's model. The shift from teacher-centered to student-centered via the internet means that teachers and students at all levels need to embrace information and communication technology. Information and communication technology is generally accepted as a model instrumental tool that enables the business educator to modify the teaching and learning methods in order to increase the student's interest. Though chalkboard, textbooks, typewriters, duplicating machine, dictating machine, radios, film have been used in teaching business education over the years, none has impacted on the teaching and learning of business education processes like the computer.

The ICT revolution has rapidly improved the process of learning and the acquisition of knowledge, and is equally transforming the world in unexpected ways (Aruchalam, 2005). The use of ICT facilities in teaching implies the application of the facilities in collecting, processing, analyzing, managing, storing and retrieving information or data that can be used to enhance, stimulate, or promote teaching and learning. Papoioannon and Charalambous (2011), stated that both male teachers and female teachers hold positive attitudes towards ICT with the male having stronger attitude than the female colleagues. It is expected that Business Education lecturers can use ICT facilities effectively irrespective of their gender.

Statement of the Problem

In spite of the introduction of ICT into the curriculum of business education in colleges of education in Nigeria, the performance of NCE business education graduates has not changed greatly. Even with the new teaching methods that are ICT based, most lecturers prefer to use the traditional method in teaching and learning business education such as chalkboard, outdated equipment for teaching skills acquisition courses. This could be attributed to the insufficient provision of ICT facilities that affects the teaching and learning of business courses. The business education program in most Nigerian schools lacks modern teaching facilities, laboratories, and instructional facilities and this affect effective teaching and learning. The ICT facilities in colleges of education seem not to be available. These could be due to poor network, lack of electricity or poor storage facilities in some colleges of education in North-West, Nigeria. On the basis of the foregoing, the researcher is concerned with ascertaining the availability of interactive and non-interactive information and communication technology (ICT)

facilities in instructional delivery of business education courses in colleges of education in North-West Nigeria, Nigeria.

Purpose of the Study

The main objective of this study was to determine the availability of information and communication technology (ICT) facilities in instructional delivery of business education courses in colleges of education. Specifically, the study sought to determine the:

1. Interactive ICT facilities available for instructional delivery of business education courses in Colleges of Education in North-West Nigeria.
2. Non-interactive ICT facilities available for the instructional delivery of business education courses in colleges of education in North-West Nigeria;

Research Questions

The following research questions were formulated to guide the study:

1. What are the interactive ICT facilities available for the instructional delivery of business education courses in colleges of education in North-West Nigeria?
2. What are the non-interactive ICT facilities available for the instructional delivery of business education courses in colleges of education in North-West Nigeria?

Hypotheses

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

HO_1: The availability of interactive ICT facilities for the instructional delivery of business education courses does not significantly depend on location.

HO_2: The availability of non-interactive ICT facilities for the instructional delivery of business education courses does not significantly depend on gender.

Concept of Information Communication and Technology

The whole concept of information and communication technology revolves on how information and communication are manipulated. Nworgu (2007), defines ICT as a broad based technology that supports the creation, storage, manipulation and communication of information. It refers to digital devices which is made up of computers and telephones with varying capacities for information processing, which has become today's office manager's management tool. Information and communication technology allow us to access, retrieve, store, organize and manipulate information. According to Adeyemi (2010), information and communication technology (ICT) refers to a broad range of activities and equipment including tools and applications, which are available and accessible through computers, the internet, telecommunication and micro –electronic tools.

Kahn et al, (2012) describes software as detailed instructions (programs) and data that enable hardware to perform its tasks at high speed. Haddad (2008), notes that globalization and technological change processes that have accelerated progressively over the past few years have created a new global economy, powered by technology, filled by information and driven by knowledge.

Concept of Business Education

Business education as a program of study which offers students who wish to pursue a career in business an opportunity to develop those skills, abilities and understanding that will enable them to enter, perform and progress in a business occupation after graduating from high school or the university.

Aliyu (2006), identifies two purposes for business education for the students planning for gainful employment in business education and general business education program. Business education is the field of training in business practices and in specific skills such as accounting, information, processing, keyboarding/typewriting and shorthand. The objectives of Business Education as contained in the

NCCE minimum standards for Nigeria Certificate in Education (2008:18) are as follow:

1. To produce well qualified and competent NCE graduates in business subjects who will be able to teach business subjects in our secondary schools and other related educational institutions.
2. To produce NCE business teachers who will be able to inculcate the vocational aspects of Business Education into the society.
3. To produce NCE Business teachers who will be involved in the much desired revolution of vocational development right from the primary and secondary schools.
4. To equip students with necessary competences so as to qualify them for a post-NCE degree program in Business Education.
5. To equip graduates with the right skills that will enable them to engage in a life of work in the office as well as for self-employment. The objectives of Business Education at the degree level are similar to that of NCE.

To this end, if general education is seen as a means of adjustment of the individual to his environment, then business education should simply be seen as a means of adjustment of the individual to his business environment. In Nigeria, business education is offered at different levels of education but done as a fully-fledged course in the tertiary institutions, particularly in the colleges of education and faculties of education of the universities.

Information and Communication Technology Facilities

Information and Communication Technology has become a critical tool for professional training of teachers. In an information technology age, the use of ICT can be advantageous in many ways, lessons are prepared well in advance electronically and utilized periodically in the classroom. The commonly utilized ICT facilities in enhancing effective teaching and learning include the following: graphics tablet, document camera, smart podium, document camera,3D printer, E-Reader, CD-ROM, printer, Photocopy machine, Computer, calculators, Slide projector etc. These ICT facilities are very useful tools to the students, researchers, teachers and people in the academic setting. Facilities like internet is mostly accessed by the students because of their search for assignments materials, research and scholarship information.

Interactive ICT and Non Interactive ICT

The Interactive ICT facilities are including: Smart Podium, Document Camera, Interactive Pad (IPad), Screen Beam, Smartphones, Interactive Table, The Computer with internet connectivity, Satellite Dish, Graphics Tablets etc.

A non-interactive ICT is one that, when started, continues without requiring human contact. In the opinion of Spacey (2017), non-interactive is a term for systems, services and products that are not used directly by people. In other words, they don't accept user input. Furthermore, IGI Global (2018), asserts that the materials on the Web are for viewing or downloading only. The computer provides no feedback or very simple (e.g., yes/no) feedback to students' input. Examples include: Projector, Data Projector, Slide Projector, CD-ROM, Tape Recorder, Television, Spreadsheet, Calculator, Printer, Flash Drives, Photocopying Machine, Cameras e.t.c.

Theoretical Framework

The communication theory was propounded in 1948 by Claude Elwood Shannon as an off-shoot of the information theory. The main concern of this theory is how best to encode the information that a sender wants to transmit to the destination. Craig (2000) posited that, the communication theory is a field of information and mathematics that studies the technical process of information and the human process of communication. Craig maintained that, the land mark event that opened the way to the development

of communication theory was the publication of an article by Claude E. Shannon in the Bell System Technical Journal between July and October, 1948 under the title "A Mathematical Theory of Communication".

Dainton (2011) outlines different traditions of the communication theory and how each one of them would engage the other in dialogue. This theory has relevant implication to the current study. Because teaching involves imparting or transmission of skills, ideas and knowledge from the source through the sender (teacher) to the destination (learner) and so the effective use of multimedia (ICT facilities) will greatly enhance the process of effectively communicating information to the learners (who is the receiver).

Methods

The design for this study was descriptive survey design. The design was considered appropriate for this study because it sought facts, opinions and views of respondents. A survey research design, according to Aliyu (2006), implies the use of sample data for an investigation to document, describe and explain what is in existence or non-existence. In descriptive research design, the researcher uses respondents' views, opinion and facts from literature to collect analyze and provide answers to the research questions (Aliyu, 2006). This, therefore, means that information is gathered on the subject of investigation and is described in their original setting. The population of this study consisted of two hundred and forty-three (243) business education lecturers from ten colleges of education in North-West of Nigeria and no sample was made as the population was manageable. The researcher used frequency counts and percentages to answer the research questions. The null hypotheses were tested using Chi-square statistic at a significant level of 0.05. For any item to be agreed as available it must have 50% or above else it was not agreed. Similarly, the null hypothesis was accepted where the calculated x^2-value is less than the x^2-critical Value. But where the calculated x^2-value is greater than the x^2-critical, the null hypothesis was rejected.

Results

Research Question 1

What are the interactive ICT facilities available for the instructional delivery of business education courses in colleges of education in North-West Nigeria?

The analysis of research question one was presented in Table 1.

Table 1*:* Percentage Results of Interactive ICT Facilities Available for Instructional Delivery in Business Education

S/N	Items	No: Respondents for Available	% of Respondents for Available	No: Respondents for Not Available	% of Responden ts for not Available
1.	Graphics Tablets	40	17.47	189	82.53
2.	Interactive Digital/ Smart Board	20	8.73	209	91.27
3.	Smart Podium	0	0	229	100
4.	Document Camera	20	8.73	209	91.27
5.	Smart Table	0	0	229	100
6.	Computer with Internet connectivity	35	15.28	194	84.72
7.	Interactive Pad (Ipad)	8	3.49	221	96.51
8.	Screen Beam (Classroom Commander)	0	0	229	100
9.	Smartphones	100	43.67	129	56.33
10.	Edusat (E-learning)	38	16.59	191	83.41

Source: Administered Self -Questionnaire

Based on the results in Table 1 items: graphics tablet, interactive digital/ smart board, document camera, computer with internet connectivity, Ipad, and Smartphone and Edusat (E-learning) were the interactive ICT facilities available for instructional delivery for business education, while document camera, smart podium, smart table, screen beam (Classroom Commander) and were the interactive ICT facilities not available for instructional delivery for business education courses.

Research Question 2

What are the non-interactive ICT facilities available for the instructional delivery of business education courses in colleges of education in North-West, Nigeria?

The answer to the non-interactive ICT facilities available for instructional delivery is presented in Table 2.

Table 2: Percentage Results of Non-Interactive ICT facilities Available for Instructional Delivery in Business Education

S/N	Item	No: of Respondents for Available	% of Respondents for Available	No: of Respondents for Not Available	% of Respondents for not Available
1.	Digital calculators	229	100	0	0
2.	Fax machine	155	67.69	74	32.31
3.	Printer	229	100	0	0
4.	Scanner	229	100	0	0
5.	Flash drive	229	100	0	0
6.	Photocopying machine	229	100	0	0
7.	CD-ROM	229	100	0	0
8.	Tape Recorder	229	100	0	0
9.	Slide Projector	0	0	229	100
10.	Television	229	100	0	0

Source: Administered Self -Questionnaire

The result presented in Table 3 reveal that digital calculators, fax machine, printer, scanner, flash drive, photocopying machine, CD-Rom, tape recorder and television were the non-interactive ICT facilities available for instructional delivery of business education courses in colleges of education in the North-West, while fax machine and slide projector was the only non-interactive ICT facility not available.

Research Hypotheses:

The research hypotheses were analyzed using chi-square as presented below:

H_{01}: The availability of interactive ICT facilities for instructional delivery of business education courses does not significantly depend on location.

The analysis of result for hypothesis 1 using chi-square ($_x^2$) is presented in Table 3.

Table 3: X^2 Analysis on Availability of Interactive ICT Facilities for Instruction Delivery on Location

Variable	Available	Not Available	Total
Urban	810	519	1329

	(795.08)	(533.94)	
Rural	560 (574.92)	401 (386.08)	961
Total	**1370**	**920**	**2290**

x^2 cal = 1.61 Df = 1 x^2 crit = 3.84

Since x^2 cal is less than x^2 crit (1.61<3.84), HO_1 is accepted that the availability of interactive ICT facilities for instructional delivery of business education courses does not significantly depend on location.

H_{02}: The availability of non-interactive ICT facilities for instructional delivery of business education courses does not significantly depend on gender.

The analysis of data for hypothesis 2 is presented in Table 4.

Table 4: x^2Analysis on Availability of Non-Interactive ICT Facilities for Instructional Delivery Based on Gender

Variable	Available	Not Available	Total
Males	1072 (1089.45)	187 (169. 54)	1259
Females	875 (857.55)	116 (133.45)	991
Total	**1947**	**303**	**2250**

x^2 **cal = 4.714 df = 1** x^2 **crit = 3.841**

In Table 4, the x^2 cal (4.714) was found greater than the x^2 cal (3.841). Based on the decision rule to reject the null hypothesis wherex^2 cal is greater than the x^2 crit, it was rejected that the availability of non-interactive ICT facilities for instructional delivery of business education courses does not significantly depend on gender. This means that gender determines the availability of non-interactive ICT facilities for instructional delivery in business education.

Discussion of the Findings

The findings of the study are summarized below:

Research question one, showed that graphics tablet, interactive digital/ smart board, document camera, Computer with Internet connectivity, Ipad and Smartphones, smart podium, smart table and screen beam (classroom commander) were the interactive ICT facilities not available for instructional delivery of business education courses in colleges of education

Similarly, hypothesis 1 revealed that the availability of interactive ICT facilities for instructional delivery of business education courses does not significantly depend on location, since the x^2-cal was less than the x^2-crit therefore, hypothesis 1 was accepted.

The research question 2 showed that, Digital Calculator, Fax Machine; Printer, Flash Drive, Photocopying Machine, CD-ROM, Tape Recorder and Television were the non-interactive ICT facilities available for instructional delivery of Business education courses in colleges of education in the North-West, while slide projector was the only non-interactive ICT facility not available.

More so, it was found that in hypothesis two, the availability of non-interactive ICT facilities for the instructional delivery of Business Education courses significantly depends on gender, since the x^2- cal was greater than x^2-crit therefore, hypothesis 2 was rejected.

Conclusion

Conclusion was drawn based on the findings of the study that interactive facilities were not available in instructional delivery of business education courses. Also, the availability of interactive and non-interactive ICT facilities are not influenced by location or gender. ICT facilities are needed for instructional delivery of business education Courses in both urban and rural areas that the institutions are established. These facilities enhance teaching and learning and to a great extent promote interactions and collaborations among learners and teachers as well. Colleges of Education in the North-West, Nigeria are called upon by these findings to make available ICT facilities for effective delivery of instructions in Business Education Courses.

Recommendations

In line with the findings of the study, the following recommendations were made:

1. Colleges of Education in the North-West, Nigeria, in making budgets, should include the purchase of relevant interactive facilities for teaching and learning of Business Education Courses.
2. The gender gap that determines the availability of non-interactive ICT facilities for effective delivery of instructions in Business Education Courses in the North-West, Nigeria, should be bridged.

References

Adeyemi, T. O., & Olaleye, F. O. (2010). Information communication and technology (ICT) for the effective management of secondary schools for sustainable development in Ekiti State,

Aliyu, A. (2006). *Conducting research in education and the social sciences.* Enugu: Tian Ventures.

Anaekwe, M. C. (2003). *Identification of some ICT enhancing skills of Pupils need for Sustainable Science Technology and Mathematics (STM) Education.* Enugu: Podik Printing.

Anamakiri, S. O. (2004). *Information technology in the banking industry*. Port Harcourt: Eristan publications.

Anderson, L. W. & Glem D. R. (2003). *Model selection and multi-model inference: A practical information – theoretical approach.* New York: Springer Science.

Aruchalam, S. (2005). *Information and knowledge in the electronic age*: A development country perspective. Retrieved 15/6/10 from http://www.by tesfored.org/5th/arum.htm.

Azih, N. (2010). Modern accounting skills required by accounting education students. *Business Education Journal, 7*(2), 120 -130.

Craig, R. T. (2000). *Communication theory as a field. International Communication Association*. Retrieved 12/7/2011 from http://www.ncolorado.edu/communication/ metadiscou rse/bibliography/craig/ctasa.

Dainton, M. (2011). *Applying communication theory for professional life: Sage publications*. Retrieved from http://psycnet.apa.org/record/2010-08984-000

Haddad, W. D. (2008). Is instructional technology a must for learning? Retrieved 3rd April 2012. http://www.technologia.org/.

IGI Global (2018). *What is non-interactive?* Retrieved from https://www.igi-global.com/dictionary/non-interactive/20461

Kahn, H. Hasan, M. and Clement, K. (2012). Barriers to the introduction of ICT into education in developing countries: the example of Bangladesh *International Journal of Instruction, 5*(2), 61 – 80.

Kling, R. (2011). *What is social information?* Retrieved from http://www.rkesc.indiana-edu.

Laaria, M. (2013) Leadership challenges in the implementation of ICT in public secondary schools, Kenya, *Journal of Education and Learning, 2*(1), 32-43 Doi:10.5539/ jel.v2nlp32.

Makhanu, E. (2010). Principals' literacy in ICT: towards improving secondary school performance in Kenya, *(Unpublished Ph.D Thesis), University of South Africa*.

Manduku, J. Kosgey, A., & Sang, H. (2012). *Adoption and use of ICT in enhancing management of public secondary schools: a survey of Kesses zone secondary schools in Wareng District of Wasin Gishu Country, Kenya.* Retrieved from https://www.semantic scholar.org/paper/Adoption-and-Use-of-ICT-in-Enhancing-Management-of-MandukuJ-Sang/30b1d93ea891f173019d218065c144f8fa511599

Nworgu, B.G. (2007). The indispensability of ICT in educational research in information and communication technology in the service of education Ed. By

Okoli, B.E. (2010). Accounting education in Nigerian universities: need for review of curriculum for skills and competencies to meet the challenges of the changing business environment. *Journal of Business Educational Research and Development, 1*(2), 38 -41.

Oladeji, A. (2007). Information and communication technology in classroom instruction. *Journal of Professional Teacher Trainer, 111(1),10-15.*

Spacey, J. (2017). *5 examples of non-interactive thing*. Retrieved from http://www.who.int/ gender-equity-understnding/gender-definition.

Ugwu, R.N., & Obogbulem, A. (2011). Information and communication technology (ICT) capacity building for staff personnel in post primary schools for effective school administration. *International Journal of Educational Research, 11*(1), 190-210.

UNESCO (2002). *ICT in education*. Retrieved from *http://www..askjeve.com*.