CAPACITY BUILDING NEEDS OF EDUCATION LECTURERS IN INFORMATION AND COMMUNICATION TECHNOLOGY IN UNIVERSITIES

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Abstract

This study investigated the capacity building needs of education lecturers in ICTs in universities in Nigeria. Three research questions and three hypotheses were formulated to guide the study, which adopted the descriptive survey design. A sample size of 320 education lecturers was drawn from four universities using stratified random sampling technique, representing 56% of the population. Questionnaire titled "HCBNELICTQ" was validated and the reliability established at 0.92. In analyzing the data, mean scores and standard deviation were used to answer the research questions while z-test was used in testing the hypotheses. The findings revealed among others that, the capacity building needs of education lecturers on ICT for instructional delivery in universities include: knowledge of operating the ICT devices, good knowledge of handling the devices in teaching, clear skills of manipulating the devices for research and developments, using the devices to store and present academic data, and regular involvement of staff in knowledge updates through appropriate use of new technological devices. Based on the findings of this study, the researchers recommended that education lecturers should cultivate the right attitude to work for effective instructional task performance by maintaining the clarity of job responsibilities in the university system.

Key Words: capacity building needs, education lecturers, ICTs, Universities, Nigeria.

Introduction

Increasingly, global business community has realized how education can promote social, economic and cultural objectives and as well serve as a strategic instrument for national and international development. Education as stated by Nwabueze (2011) could be seen as the industry that produces manpower for socio-economic, cultural and political improvement of any given society. Every educational system in any human society requires highly skilled and competent teaching and non-teaching personnel to sustain and enhance both academic and administrative programmes. It is through education that societal values, norms, culture, needs and aspirations are inculcated in individuals that are willing to accept change for sustainable development, peaceful coexistence and maximum stability of a country. Nwabueze and Nwokedi (2016) see education as the system for teaching, learning, administration, research processes and community service through efficient and effective management of educational resources for individual growth and national development.

University education is responsible for social, economic and scientific development. It transforms an individual for societal development and nation building.

University education, which is the education after secondary education, produces high level manpower for individual and national development. It is an educational institution that is involved with teaching, administration, research and development, character and learning as well as community services (Madumere-Obike, Ukala & Nwabueze, 2013). University is a tertiary institution on which the future of every country depends because it produces elites for the growth and technological advancement of every country.

Education lecturers are those who transfer knowledge, skills and attitudes to the learners with the sole aim of knowledge building and production. These education lecturers are embedded with right knowledge and skills for information and knowledge exchange in universities, polytechnics and colleges of education in the department of educational management and administration. They inculcate transferable skills into the learners. They are extensively involved in teaching, research and community service. Education lecturers are responsible for shaping the destinies of nations and individuals. The greatest man on earth was taught by a teacher. Without the teacher, there would be no educationists, educators, pharmacists, architects, doctors, engineers, chemists, lawyers, accountants, agriculturists, administrators and even teachers themselves. Generally, academic staff of universities are of utmost importance in developing human skills which is vital and fundamental to national development.

Capacity building needs are those skills and ideas required of every human for individual development and nation building. Capacity building entails a process of equipping individuals with the necessary skills required for meeting the goals of an organization through developmental programmes. This involves staff training and development for organizational development. In an educational setting, it is a process of acquiring new knowledge, teaching method, new techniques, skills, ideas and changes required for the production of students through training and development. The ICT capacity building needs also include: knowledge of operating the ICT devices, good knowledge of handling the devices in teaching, clear skills of manipulating the devices for research development, using the devices to store and present students' data, etc. Such training and development programmes include: in-service training, pre-service training, mentoring programme, conferences, seminar, extension programmes, team-teaching and workshops. Through capacity building programmes, innovations in methodology, curriculum contents, improvisation of resource materials, administrative skills, supervisory methods and techniques, and evaluation models are made known to teaching staff to improve their competences and effectiveness.

Human capacity building is aimed at equipping the academic and administrative staff with the functions to be able to discharge their professional responsibilities effectively for societal growth and development. It provides the staff with new knowledge, ideas and skills for organizational effectiveness. Capacity building programme helps the teaching staff to carry out their duties effectively; put the students in the right directions with skills and ideas needed for individual improvement; and improved capacity to contribute towards nation building. Meanwhile, staff members would be deriving great benefit when they participate in human capacity building programmes (Madumere-Obike, Ukala & Nwabueze, 2015). Capacity building of lecturers is a commitment to structured skills enhancement and personal or professional competence for effective service delivery. It is important for everyone, no

matter their occupation, role or responsibility within an organisation, to ensure that their skills and knowledge are up-to-date. The undertaking of staff development is particularly important in today's fast moving technological world for the production of students with innovative and creative thinking. Hence, capacity building needs of educational administration lecturers in the universities include: new knowledge and skills to carry out their duties effectively, skills on research and development, ideas needed for knowledge creation and team spirits to deliver lectures appropriately (Madumere-Obike, Ukala & Nwabueze, 2015). It equally equips them with useful knowledge as well as proper skills of applying and utilizing these information and communication technology devices in education processes such as teaching, learning, research development, administration, sports and even community services.

Information and communication technologies (ICTs) are modern and electronic devices used in processing, storing, applying, documenting, and retrieving useful information that sustain the educational programes. Looking at the speed and expanding rate at which ICT devices have accumulated since the mid-20th century, Nwabueze (2011) is of the opinion that application and utilization of ICT services in education industry have developed a strong role in development of higher education institutions and globalization around the world. According to Yusuf (2005), the field of education has been influenced by application of ICTs devices in institutional programmes has really makes teaching, learning, school management and research more serious for individual and societal growth. ICT devices have enhanced the quality of education through improved medium for teaching, learning, research and management. Training on ICT applications and utilizations are part of human capacity building needs of university lecturers for instructional competitiveness. These ICT devices and skills help them in teaching the students for effective service delivery; and equally assist them in their academic research and development. ICT devices include: automated computers, Internet, cell phones, interactive multi-media, and digital tools for schools development, projectors, CDs, flash drives, telescopes, magnetic boards, interactive boards, etc (Nwabueze & Obaro, 2011). ICT use has become an important part of school curricula across several countries.

Academic staff of universities can administer teaching using projectors, networking cables and laptops, which are parts of the ICT devices needed for effective teaching, learning, research, administration and virtual conferencing. They can administer test and examinations online, browse and print materials needed for lesson preparation and research development, forward their articles and paper through internet and social network sites, and create new knowledge using computers, magnetic and interactive boards. Students on the other hand, learn through computers and projectors, make researches online and create new knowledge, write examinations and tests online, and present papers in workshops and conferences virtually, and defend their thesis/projects/seminars using projectors and computer system.

Literature Review
Human Capacity building needs of education lecturers:

Human resource is the key input in the process of organizational production and skill development. Human resource constitutes the life-wire of every organizational activity for improved productivity and upliftment. It is the human agents that participate in the day to day activities and functions of the organization to accommodate expansion, improvement and achievement of organizational goals. Human capacity building in educational institutions

entails the professional training and development of teaching staff and non-teaching staff for individual and institutional growth as well as societal development (Madumere-Obike, Ukala & Nwabueze, 2015). Human capacity building needs in ICT for quality delivery of education include: staff qualification, training and development on the related ICT programmes in education industry, teaching, research and participation in conferences/workshops. Staff of any organization needs to be qualified with good grades, involve in staff training and continually updates his knowledge and skills for improved instructional competitiveness (Madumere-Obike, Ukala & Nwabueze, 2017).

Adiele (2005) stated that, human capacity building involves the provision made to educate and improve the performance of staff from initial employment to retirement stage, which makes the staff functional and productive in his subject-area. That is, it is a long-term educational process which managerial personnel learn conceptual and intellectual knowledge for specific and general purpose. Thus, human capacity building is aimed at equipping the lecturers with new knowledge and the skills required to discharge their professional responsibility effectively and efficiently in ascertaining quality education. In other word, capacity building of lecturers is aimed at providing knowledge and skills (both conceptual and intellectual) to staff members for organizational effectiveness and structural improvement. International Labour Office (2000) affirms that capacity building of staff improves their productivity at work, income earning capacity and living standard for present and future growth. As observed by Ajeyalemi (2002), an effective teacher of any subject must demonstrate:

1. Mastery of general and subject-specific teaching strategies; 2. Knowledge of the learner, learning theories, principles and methods; and 3. Good personality as a leader and positive attitudes to the students and the subject matter (p.17).

Teachers go into teaching profession with a body of knowledge and skills received from training; but must continue to update these knowledge and skills for effective functional performance and students' productivity. Schools are playing an increasing role in the capacity building of staff to maintain proper coaching of staff for improved functional performance and regular growth of the institution. The school can be a source of learning and training for academic staff on their respective courses to enhance their academic task performance that can promote students' productivity and institutional growth. As the teachers take up teaching works in schools, from then on, it is likely to affect the way that the teachers learn for many years, from initial recruitment throughout the professional career growth of the teacher in the school organization (Kohonen, 2002).

Olaniyan and Ojo (2008) are of the opinion that, capacity building follows a system of building human resources to meet the needs of an industry or vocation for improved task performance and academic productivity. Human capacity building needs of educational lecturers could be seen as the modern trends in educational development needed to improve their instructional effectiveness, task performances, institutional growth and students' productivity. These capacity building needs of lecturers may include: knowledge of ICT application, social networking, internet browsing to source for information, virtual presentations at conferences, and oral presentation of papers using power point and laptops. According to Garuba (2004), human capacity building is a process in which an academic staff is equipped to do their works efficiently and effectively for enhanced service delivery to education industry. This capacity building programme equips them with all it takes to be

productive at work negotiate in all academic matters; thereby contributing to the attainment of educational goals and objectives.

ICT devices and capacity building needs of education lecturers

The emergence and convergence of various ICT devices such as radios, televisions, computers, internets, telephones, videos, multimedia, CD- ROMS, software and hardware provides unique opportunities for promoting educational programmes as a mass scale in developing nations (Nwabueze, 2011). Practitioners and academics believe that ICTs can be successfully employed to reach out to a greater number of staff to promote teaching and knowledge along-side exposing the students to the technical skills required for employment (Itaas, 2008). Ronald (2001) states that ICT technologies serve as useful tools for teaching, administration, research and learning purposes for academic staff, aiding them to teach course curriculum and subject contents to students.

ICTs can actually help trigger up or tap into lecturers' interest in teaching through new media and have a potential of enhancing their preparation for further education and work (Nwabueze & Ukaigwe, 2015). This is evidenced in today's improved communication technology, which has made time and space less complex in the academic world and other business transactions. It could be observed that this modern age is the age of information exploration and exploitation in which an average individual wants to explore the information system through modern technology devices.

It also covers a wide-whole range of applications, techniques, and systems, which has automatically changed many aspect of the way of living and academic records (Collis, 2002). Lallana and Margret (2003) identify ICT applications as wide broad field encompassing computers, communication equipment and the services associated with scientific and technical programmes. However, ICT promises better economic prospects, fuller political participation, communication information, enhanced ability to acquire education and skills, and to transcend the various social restrictions. However, ICT devices are tools to facilitate access to variety of development resources in education industry for staff and students' productivity. It refers to all purposeful enabling tools for technological and socio-economic advancements and societal development.

However, the ICT devices required for enhancement of capacity building of educational administration lecturers include: computer systems, internet facilities, projectors, CDs, flashes, uninterrupted power supply, printers, scanners, photocopiers, tapes and video cameras. These ICT devices enable the lecturers to fully gain the knowledge and skills required of them for knowledge transfer and productivity in higher educational institutions and beyond the labour market. They equally make it faster to communicate and transfer information from one point to another such as virtual and oral presentations, academic practices, administrative processes, and networking.

Ways ICT Devices can Enhance Capacity Building of Education Lecturers

The use of interactive computers/video disc with laser play and colour TV monitors, micro-computer based instruction (CBI), and computer assisted instruction (CAI) in universities has been very useful in form of drills and practice in classroom interaction and laboratory activities (Onyegegbu, 2001). According to Shute and Bonar (2001), specialized computer programmes were found to help develop inquiry skills while also increasing scientific knowledge among lecturers. Friedler, Nachmias and Songer (2002) found out in their study that scientific reasoning skills can be enhanced using a micro-computer based

curriculum. Ronald (2001) sees the use of computer by any lecturer as a function of his or her own computer experience and expertise, availability of hardware and software and perceived need.

When it comes to teaching, ICTs can be credible tools, especially when the learners have access to data stored on CD-ROMs or the Internet. They can use a PC to access vast knowledge bases on almost any topic, search archives of information dating back decades, ask questions online and even take online courses (Nwabueze, Iloabuchi & Adieme, 2014). So it is important to have a basic understanding of computer technology, regardless of one's career choice or aspiration. Researchers have proposed that positive attitudes toward computers, high computer self-efficacy and lower computer anxiety levels could be important factors in helping lecturers acquire ICT skills and use computers (Sam, Othman & Nordin, 2005). ICT skills refer to the ability to develop, operate and maintain ICT systems (Nwabueze, 2011). Nwabueze further stated that, new technological devices such as CD-ROMS, video disc/tapes, computers, internet, etc present great possibilities for solutions of tasks in classroom and laboratory activities thus, making both classroom and laboratory experiences exciting for students and add new productive dimension.

The available literature reviewed showed that educational administration lecturers had not shown much interest in the application and utilization of ICT devices in capacity building such as conferences, workshops, seminars and even teaching (Nwabueze & Ukaigwe, 2015). The lecturers really need to be involved in staff development practices to build up their knowledge and be ready to transfer the knowledge into students. However, the role of ICT in capacity building of lecturers include: research development, presentation of the research, acquisition of new knowledge, preparation lessons, development of skills for knowledge transfer and instruction delivery. For instance, e-learning is becoming one of the most common means of using ICT to provide education to students both on and off campus by means of online teaching offered via web-based systems (Yusuf, 2005; Mutula, 2003). With proper application and utilization of ICT devices in education, lecturers would be able to create and build new knowledge, develop real interest on research development, and be fully involved in capacity building programmes and instructional competitiveness. Academic staff participation in capacity building programmes supports them in performing their respective duties in school activities.

Theoretical Framework

The theories guiding this study are communication theory, and theory of Organizational Productivity.

Communication Theory by Claude Shannon in 1948

According to Oluwuo and Nwabueze (2016), Claude Shannon came up with the theory of communication in the late 1940s, which invented the simple abstraction of human communication known as the channel. However, as stated by Shannon, transmission passes through the channel with adequate measure of information yielding an organized message that must be transmitted from the sender to the receiver. He explained that, this amount of information could be seen as a quantum of data that is closely related to the chance of one of several messages being transmitted in the process. The introduction of entropy rate by Shannon created a communication channel through which information production rate is measured and this is called "the communication channel capacity".

For the purpose of this study, communication theory is very relevant because, human capital building in higher education industry is achieved through ICT exchange such as

networking, video conferencing, collaborative teaching, research and development. In this process, the sender (lecturers) transmits required information (academic activities) through a medium (ICT facilities) to the receiver (the students) for knowledge building and productivity. Without ICT devices, capacity building needs of education lecturers may not be actualized, as lecturers today build up new knowledge through the application and utilization ICT devices, and acquire relevant skills from manipulating the devices. Therefore, adequate provision of knowledge and building of relevant skills can be achieved through proper utilization of ICT devices in teaching, research and school administration.

Theory of Organizational Productivity by Gilbert in 1947:

The theory of organizational productivity serves as the basic platform for this study as human capacity building of education lecturers determine their effort in production processes. The theory according to Oluwuo and Nwabueze (2016), was propounded by Gilbert in 1947, which states that organizational productivity/outcomes are dependent on the availability, utilization and maintenance of the resources employed in the production process for the attainment of its objectives. However, Gilbert was trying to capture in his theory was trying to figure out what must build a strong synergy between the quality and quantity of human and material resources at its disposal before an organization could make an appreciable progress in implementing and achieving its goals.

Building a strong synergy between the two suggests that an institution is not only put under consideration, the quality of the resources it has, but also, the available quantity of such resources meant for the implementation of its goals and objectives (Oluwuo & Nwabueze, 2016). Therefore, one can say that human and material resources are adequate if such resources are in the right proportion when compared to the tasks and goals involved are properly utilized. As the number of tasks and goals to be performed in an organization increases, it will be equally expected that quality and quantity of staff have to rise in order to meet up with the expansion and expectations of the institution.

This theory states that an organization is the replication of what people in such an organization are. It is the view that the nature of the people found in an organization determines what that organization is and how far it will go in attaining its set goals. Therefore, the ability of the educational planners to strike balance between quality and quantity of the available human resources and instructional resources leads to the proper implementation of the organizational set goals which invariably translates into high productivity and utility level for any technical education programme. This implies that, the involvement of educational administration lecturers in capacity building programmes would yield positive results in school development.

Statement of the Problem

There are considerable differences on the development of ICTs in schools and use of ICT devices for academic and research purposes within and between universities in the country (Nigeria) by education lecturers. Some educational institutions locally and internationally seem to have embedded ICT into their school programmes and programme management, but this seem to demonstrate and show low level of improvement and ineffective utilization in the different facets of teaching, learning, administration, community service and research purposes in the universities in Nigeria. Inadequate and poor human capacity building programmes solely and adversely affect academic staff ability in transmitting the value of education into the students and other staff. This may be as a result of inadequate knowledge of the application of ICT devices among them in school processes

(teaching, administration, research development and learning). Despite that these ICT devices are rarely provided in the school system by the government, some academic staff of universities, especially those in the Faculty of Education seem not to be ready to learn and apply them in their academic functions, personal development and school upliftment. The little available ICT devices in schools seem not to be functioning effectively for knowledge building, skill transfer, scientific reasoning, technology programming and academic production functions. This could be as a result of inappropriate time scheduling among staff for proper ICT training and fund to participate in ICT training and development programmes. This could equally be as a result of improper management of teaching staff by the school administrators, which eventually may affect their active participation or involvement in ICT training programmes thus, reducing the quality of staff task performances and production function for the accomplishment of educational set goals and objectives. Therefore, this study investigates the various ways of enhancing human capacity building needs of education lecturers in ICTs in universities in Nigeria with focus on the ways capacity building of staff on ICT enhances their instructional activities.

Aim and Objectives of the Study

The aim of this study is to investigate the capacity building needs of education lecturers in ICTs in universities in Nigeria. Specifically, the objectives of the study include:

1. Ascertain the capacity building needs of education lecturers on ICT for instructional delivery in universities;
2. Identify the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities;
3. Determine the ways ICT devices can enhance the capacity building needs of education lecturers for instructional delivery in universities;

Research Questions

1. What are the capacity building needs of education lecturers on ICT for instructional delivery in universities?
2. What is the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities?
3. In what ways can ICT devices enhance the capacity building needs of education lecturers for instructional delivery in universities?

Hypotheses

1. There is no significant difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in universities.
2. There is no significant difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities.
3. There is no significant difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery in universities.

Methodology

Research design: Based on the procedures, this work adopted a descriptive survey design. Descriptive survey design gives researchers the knowledge to follow quantitative and qualitative data in analyzing empirical works of two variables and it promotes adequate data processing. It discusses matters that exists and opinion that are held.

Population: The population of this study comprised all the education lecturers in the six federal and six state university institutions in South-South, Nigeria. Precisely, the population is 2,410 lecturers with 1,090 male staff and 1,320 female staff (South-South Academic Reports of Universities, 2017). There are six State Universities and six Federal Universities in South-South, Nigeria comprising 1,305education lecturers in Federal Universities and 1,105 education lecturers in the State Universities.

Sample and Sampling Techniques: Multi-stage sampling was used in this study. A sample of four universities (two state and two federal) was selected from the population using simple random sampling technique, representing 33.3% of the total universities in the political zone. The universities include: University of Port Harcourt, University of Calabar, Rivers State University of Science and Technology, and Delta State University, Abraka. From the two federal universities, there are 370 education lecturers and 212 education lecturers from the two state universities sampled making a total of 582 respondents. From the four sampled universities, a sample size of 320 education lecturers was randomly drawn using stratified random sampling technique, and this represented 56% of the staff. Specifically, 80 lecturers were drawn from each of the selected universities (160 from Federal and 160 from State Universities) comprising200 male and 120 female education lecturers.

Instrument for Data Collection: The instrument was questionnaire titled "Capacity Building Needs of Education Lecturers in Information and Communication Technologies Questionnaire (CBNELICTQ)" designed and developed by the researchers. The questionnaire comprised sections 'A and B'. Section 'A' contained background information about the respondents such as sex, status and location. Section 'B' contained questionnaire items designed to generate relevant information based on the variables of the study.

Validity of Instrument: The instrument was facially and contently validated.

Reliability of the Instrument: The two sets of scores realized were correlated using the Pearson's Product Moment Correlation to establish the reliability co-efficient, which yielded an index of 0.99.

Method of data analysis: For the purpose of data analysis, numerical values were assigned to each of the response scales such as: 4 for Strongly Agree and very high extent, 3 for Agree and moderately high extent, 2 for Disagree and low extent and 1 for Strongly Disagree and very low extent. Based on this, a mean criterion of 2.50 was calculated to assess the mean responses from the respondents. Thus;

$$\frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

In analyzing the data, mean scores and standard deviation were used to answer the research questions. Any mean score from 2.5 and above is agreed upon and below 2.5 is disagreed upon. Z-test was used in testing the hypotheses of no significant difference. The z-test was adopted since the sample size is more than 30. The acceptance or rejection of any of the null hypotheses relatively was based on the critical value of z-test, which is ±1.960.

Results

Answers to Research Questions

Research Question One: What are the capacity building needs of education lecturers on ICT for instructional delivery in universities?

Table 1: Mean scores of education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in Universities

S/N	Capacity building needs of education lecturers on ICT include:	Male (200)		Female (120)		Mean Set	Decision
		Mean	St. D	Mean	St. D		
1	Knowledge of operating the ICT devices	3.43	0.47	3.38	0.60	3.41	Agreed
2	Good knowledge of handling the devices in teaching	3.45	0.46	3.40	0.60	3.43	Agreed
3	Clear skills of manipulating the devices for research developments	3.48	0.46	3.25	0.62	3.37	Agreed
4	Using the devices to store and present academic data	3.35	0.47	3.27	0.62	3.31	Agreed
5	Using the devices for administrative record keeping	3.18	0.48	3.00	0.64	3.09	Agreed
6	Assisting staff with ICT devices to be involved in human capacity building programmes	3.05	0.49	3.21	0.62	3.13	Agreed
7	Regular involvement of staff in knowledge updates through appropriate use of new technological devices	3.13	0.48	3.39	0.60	3.26	Agreed
8	Lecturers being actively involved in research development through study groups	2.10	0.56	2.08	0.72	2.09	Disagreed
9	Staff involvement in social networking using ICT devices	3.30	0.47	3.34	0.61	3.32	Agreed
10	Supporting innovative research with impact factor indexing using ICT devices	3.35	0.47	3.25	0.62	3.30	Agreed
11	Staff being active in virtual presentations during conferences	3.28	0.47	3.35	0.61	3.32	Agreed
12	Lecturers being adequately involved in knowledge building using ICT devices	3.20	0.48	3.36	0.61	3.28	Agreed
13	Staff involvement on the use of projectors in disseminating new knowledge to others	3.41	0.47	3.43	0.59	3.42	Agreed
	Aggregate Mean & St. D	**3.21**		**3.20**		**3.21**	Agreed

Both male and female education lecturers agreed on items 1-7, 9-13 with high mean scores above the mean criterion of 2.50. They disagreed on item 8 with mean score below the mean criterion. From the table, it is very clear that the higher the mean score, the lower the standard deviation and the lower the mean score, the higher the standard deviation. The aggregate mean scores of 3.21 for male staff and 3.20 for female staff indicate that, respondents agreed on the items in the table. Therefore, the capacity building needs of education lecturers on ICT for instructional delivery in universities include: knowledge of operating the ICT devices, good knowledge of handling the devices in teaching, clear skills of manipulating the devices for research developments, using the devices to store and present academic data, using the devices for record keeping, assisting staff with ICT devices to be involved in human capacity building programmes, and regular involvement of staff in knowledge updates through appropriate use of new technological devices. Also, the capacity building needs include: lecturers being actively involved in research development through

study groups, staff involvement in social networking using ICT devices, supporting innovative research with impact factor indexing using ICT devices, being active in virtual presentations during conferences, being adequately involved in knowledge building using ICT devices, and being involved in the use of projectors in disseminating knowledge to others.

Research Question Two: What is the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities?

Table 2: Mean scores of education lecturers on the extent to which education lecturers apply ICT packages in academic activities for knowledge building

S/N	Extent to which education lecturers apply ICT packages in academic activities for knowledge building include:	Federal (160)		State (160)		Mean Set	Decision
		Mean	St. D	Mean	St. D		
14	Possessing knowledge of arranging academic works in power-point presentations	2.18	0.62	2.12	0.62	2.15	Low Extent
15	Using internet connected system for virtual presentations in conferences	0.75	0.73	0.94	0.72	2.85	Moderately High Extent
16	Having knowledge of using projectors for seminar presentations	2.14	0.62	2.20	0.62	2.17	Low Extent
17	Disseminating knowledge to students using projectors in classrooms	1.37	0.68	1.33	0.69	1.35	Very Low Extent
18	Making oral/poster presentations in conferences using ICT devices	3.34	0.53	3.41	0.52	3.38	Very High Extent
19	Taking active part in networking with staff in other universities for knowledge exchange	2.40	0.60	2.30	0.61	2.35	Low Extent
20	Networking with students using ICT devices for knowledge transfer	1.38	0.68	1.22	0.69	1.30	Very Low Extent
21	Conducting research using ICT devices for knowledge production as well as indulging in staff capacity building projects	3.49	0.52	3.26	0.54	3.38	Very High Extent
22	Ability to use magnetic boards in classroom discussions for knowledge creativity	2.56	0.59	2.62	0.58	2.59	Moderately High Extent
23	Ability to send and receive emails through Internet connectivity for knowledge exchange	3.47	0.52	3.36	0.53	3.42	Very High Extent
24	Ability to use laptops effectively for knowledge creation	2.65	0.58	2.59	0.59	2.62	Moderately High Extent
25	Possessing the capacity to work on Microsoft Word without obstructions	1.34	0.68	1.34	0.68	1.34	Very Low Extent
26	Using the Microsoft Excel excellently for academic functions	1.24	0.69	1.26	0.69	1.25	Very Low Extent
	Aggregate Mean & St. D	**2.18**		**2.15**		**2.17**	**Low Extent**

N/B: Very High Extent = 3.0-4.0; Moderately High Extent = 2.50-2.99; Low Extent = 1.50-2.49; Very Low Extent = 0.01-1.49

Data on Table 2 present the mean scores and standard deviation of Federal and State University lecturers on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities. Academic staff in federal and state universities responded to a very high extent on making oral/poster presentations in conferences using ICT devices, conducting research using ICT devices for knowledge production as well as indulging in staff capacity building projects, and having the ability to send and receive emails through Internet connectivity for knowledge exchange. They also responded to a moderate extent on using internet connected system for virtual presentations in conferences, possessing the ability to use magnetic boards in classroom discussions for

knowledge creativity, and using laptops effectively for knowledge creation and development. They responded to a low extent on possessing knowledge of arranging academic works in power-point presentations, having knowledge of using projectors for seminar presentations, and taking active part in networking with staff in other universities for knowledge exchange. The equally responded to a very low extent, on disseminating knowledge to students using projectors in classrooms, networking with students using ICT devices for knowledge transfer, possessing the capacity to work on Microsoft Word without obstructions, and using the Microsoft Excel excellently for academic functions. The aggregate mean scores of 2.18 and 2.15 for academic staff in federal and state universities respectively indicated that the responses on the items in the table are low. Therefore, the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities is low.

Research Question Three: In what ways can ICT devices enhance the capacity building needs of education lecturers for instructional delivery in universities?

Table 3: Mean scores of education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for instructional delivery in universities

S/N	Ways ICT devices enhance the capacity building needs of education lecturers for instructional delivery include:	Male (200)		Female (120)		Mean Set	Decision
		Mean	St. D	Mean	St. D		
27	Involvement of lecturers in human capacity building programmes using ICT devices exposes them to the latest reform on instructional techniques needed for the exchange of knowledge	3.26	0.48	3.40	0.60	3.33	Agreed
28	Helps expose staff to new technologies for instructional enhancements	3.20	0.48	3.25	0.62	3.23	Agreed
29	Helps them cultivate the right attitude to work for effective instructional task performance	3.05	0.49	3.33	0.61	3.19	Agreed
30	Exposes staff to the clarity of job responsibilities	3.10	0.49	3.28	0.62	3.19	Agreed
31	Prepares staff theoretically and practically in their teaching subjects	3.20	0.48	3.33	0.61	3.27	Agreed
32	Helps them understand how to improvise teaching aids on their own	3.23	0.48	3.35	0.61	3.29	Agreed
33	Enables the promotion of hard-work and competition among staff	3.30	0.47	3.36	0.61	3.33	Agreed
34	Frequent participation in capacity building programmes using ICT devices increases the involvement of staff in school activities	3.41	0.46	3.42	0.60	3.42	Agreed
35	Encourages staff to share ideas among themselves for knowledge creativity	3.38	0.47	3.36	0.61	3.37	Agreed
	Aggregate Mean & St. D	**3.24**		**3.34**		**3.29**	**Agreed**

From the table, it is very clear that the higher the mean scores, the lower the standard deviation and the lower the mean score, the higher the standard deviation. The aggregate mean scores of 3.24 for male staff and 3.34 for female staff indicate that, respondents agreed on the items in the table. Therefore, the ways ICT devices can enhance the capacity building needs of education lecturers for instructional delivery in universities include: enhancing the involvement of lecturers in human capacity building programmes using ICT devices to expose them to the latest reform on instructional techniques needed for knowledge exchange, exposing staff to new technologies for instructional enhancements, cultivating the right attitude to work among staff for effective instructional task performance, exposing staff to the clarity of job responsibilities, preparing staff theoretically and practically in their teaching subjects, helping them understand how to improvise teaching aids on their own, Enabling the

promotion of hard-work and competition among staff, frequent participation in capacity building programmes using ICT devices increases the involvement of staff in school activities, and encouraging staff to share ideas among themselves for knowledge creativity.

Test of Hypotheses

Hypothesis One: There is no significant difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in universities.

Table 4: summary of z-test on the difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery

Gender of Staff	N	Mean	St. Dev.	df	z-calculated value	z-critical value	Decision
Male	200	3.21	0.48	318	0.152	±1.96	Ho1
Female	120	3.20	0.62				Accepted

Data on Table 4 present the summary of z-test on the difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in universities. Based on the analysis, the z-calculated value of 0.152 is less than the z-critical value of ±1.962 indicating that the null hypothesis was accepted. Therefore, there is no significant difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in universities.

Hypothesis Two: There is no significant difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities.

Table 5: summary of z-test on the difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities

Education Lecturers	N	Mean	St. Dev.	df	z-calculated value	z-critical value	Decision
Federal	160	2.18	0.62	318	0.433	±1.96	Ho2
State	160	2.15	0.62				Accepted

Data on Table 5 present the summary of z-test on the difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities. Based on the analysis, the z-calculated value of 0.433 is less than the z-critical value of ±1.962 indicating that the null hypothesis was accepted. Therefore, there is no significant difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities.

Hypothesis Three: There is no significant difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery in universities.

Table 6: summary of z-test on the difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery

Gender of Staff	N	Mean	St. Dev.	df	z-calculated value	z-critical value	Decision

| Male | 200 | 3.24 | 0.48 | 318 | - 1.534 | ±1.96 | Ho3 |
| Female | 120 | 3.34 | 0.61 | | | | Accepted |

Data on Table 6 present the summary of z-test on the difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery in universities. Based on the analysis, the z-calculated value of -1.534 is less than the z-critical value of ±1.962 indicating that the null hypothesis was accepted. Therefore, there is no significant difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery in universities.

Discussion of Findings

Capacity Building Needs of Education Lecturers on ICT:

The findings of this study revealed that, the capacity building needs of education lecturers on ICT for instructional delivery in universities include: knowledge of operating the ICT devices, good knowledge of handling the devices in teaching, clear skills of manipulating the devices for research developments, using the devices to store and present academic data, using the devices for record keeping, assisting staff with ICT devices to be involved in human capacity building programmes, and regular involvement of staff in knowledge updates through appropriate use of new technological devices. Also, the capacity building needs include: lecturers being actively involved in research development through study groups, staff involvement in social networking using ICT devices, supporting innovative research with impact factor indexing using ICT devices, being active in virtual presentations during conferences, being adequately involved in knowledge building using ICT devices, and being involved in the use of projectors in disseminating knowledge to others. The test of hypothesis one showed that, there is no significant difference between the mean scores of male and female education lecturers on the capacity building needs of education lecturers on ICT for instructional delivery in universities. Both male and female education lecturers all accepted that, there is need for them to have the knowledge of ICT facilities for knowledge building and production function. This implies that, education lecturers in universities need the knowledge and skills in ICT for research writing, teaching, knowledge transfer, presentation of papers, and good classroom management (capacity building). ICT devices here include automated computers, Internet, cell phones, interactive multi-media, digital tools for schools development, projectors, CDs, flash drives, telescopes, magnetic boards, interactive boards, radio, television, video, DVD, satellite systems, Local Area/Wide Area Networks, hardware and software, as well as the equipment and services associated with these technologies, such as video conferencing and electronic mail.

In line with the findings, Adiele (2006) was of the opinion that human capacity building involves the provision made to educate and improve the performance of staff from initial employment to retirement. According to him, it is aimed at equipping the lecturers with the skills to discharge their professional responsibility effectively and efficiently for academic and institutional productivity. In other word, capacity building of lecturers is aimed at providing new knowledge and skills (both conceptual and intellectual) to staff members for organization effectiveness. These capacity building needs of lecturers may include: knowledge of ICT application, social networking, internet browsing to source for information, virtual presentations at conferences, and oral presentation of papers on power

point. According to Garuba (2004), human capacity building is a process in which an academic staff is equipped to move effectively in his service to the education industry. It is the process of acquiring and increasing the number of persons who have education, skill, experience, and motivation which are crucial for economic and social development of the country. Chukwuedo and Igbinedion (2014) revealed that lecturers need capacity building in the use of ICT for instructional, research and administrative purposes.

Extent to which education lecturers apply ICT packages in academic activities for knowledge building:

The findings of this study equally revealed that, the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities is low. Academic staff in federal and state universities responded to a very high extent on making oral/poster presentations in conferences using ICT devices, conducting research using ICT devices for knowledge production as well as indulging in staff capacity building projects, and having the ability to send and receive emails through Internet connectivity for knowledge exchange. They also responded to a moderate extent on using internet connected system for virtual presentations in conferences, possessing the ability to use magnetic boards in classroom discussions for knowledge creativity, and using laptops effectively for knowledge creation and development. They responded to a low extent on possessing knowledge of arranging academic works in power-point presentations, having knowledge of using projectors for seminar presentations, and taking active part in networking with staff in other universities for knowledge exchange. The equally responded to a very low extent, on disseminating knowledge to students using projectors in classrooms, networking with students using ICT devices for knowledge transfer, possessing the capacity to work on Microsoft Word without obstructions, and using the Microsoft Excel excellently for academic functions. The test of hypothesis two showed that, there is no significant difference between the mean scores of education lecturers in state and federal universities on the extent to which education lecturers apply ICT packages in academic activities for knowledge building in universities. All lecturers in federal and state universities must acquire ICT capacity building skills to be relevant in the fast developing world. The increasing digitalization of global activities has left societies with the only option of joining the Information Communication Technologies (ICT) mobility for individual growth and societal development.

According to UNESCO (2005), ICTs enable the rapid transmission of vast amount of information and can be used as vehicles for accessing new curricula, expanding learning opportunities, introducing innovative teaching methods, promoting cooperation and simulating work place situation. ICTs can actually help trigger up or tap into lecturers' interest in teaching through new media and have a potential of enhancing their preparation for further education and work. Olibie and Akudolu (2009) revealed that, staff involvement in the application of ICT devices in academic activities equips them to be ever-ready to perform their duties in the school settings.

Ways ICT Devices can enhance the Capacity Building Needs of Education Lecturers:

The findings of this study also revealed that, the ways ICT devices can enhance the capacity building needs of education lecturers for instructional delivery in universities include: enhancing the involvement of lecturers in human capacity building programmes using ICT devices to expose them to the latest reform on instructional techniques needed for

knowledge exchange, exposing staff to new technologies for instructional enhancements, cultivating the right attitude to work among staff for effective instructional task performance, exposing staff to the clarity of job responsibilities, preparing staff theoretically and practically in their teaching subjects, helping them understand how to improvise teaching aids on their own, Enabling the promotion of hard-work and competition among staff, frequent participation in capacity building programmes using ICT devices increases the involvement of staff in school activities, and encouraging staff to share knowledge/ideas among themselves for knowledge creativity. Test of hypothesis three showed that, there is no significant difference between the mean scores of male and female education lecturers on the ways ICT devices can enhance the capacity building needs of education lecturers for quality education delivery in universities.

However, the role of ICT in capacity building of lecturers include: research development, presentation of the research, acquisition of new knowledge, preparation lessons, development of skills for knowledge transfer and instruction delivery. Apart from enhancing information generation, ICTs remove the barriers of time and location in equipping the schools with new technological devices. Accordingly, the application of ICT makes institutions more efficient and productive, thereby engendering a variety of tools to enhance and facilitate teachers' pedagogical activities. With proper application and utilization of ICT devices in education, lecturers would be able to create and build new knowledge, develop real interest on research development, and be fully involved in capacity building programmes and instructional competitiveness. Lecturers' involvement in capacity building programmes gives them the opportunity to participate fully in educational activities for the development of individuals, the institution and society at large. Adedeji (2011) revealed that ICT applications enhance the achievement of school programmes and academic performance of students. Gimba (2005) showed that appropriate classroom management is derived from effective capacity building project and research programmes.

Conclusion

Based on the findings, the researcher concluded that every academic staff in the Faculty of Education must be serious in acquiring knowledge and skills of manipulating and utilizing ICT devices for academic purposes. This would help them in teaching, research and administrative purposes. The involvement of education lecturers in human capacity building programmes using ICT devices exposes them to the latest reform on instructional techniques needed for knowledge exchange. This assists them with the capacity to use these devices for knowledge building, skill development, knowledge promotion, and instructional transfer.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Education lecturers should constantly participate in human capacity building programmes using ICT devices to acquire new knowledge on the latest reform on instructional techniques needed for knowledge exchange. This would expose them to new technologies required for instructional enhancements in the school system.

2. Education lecturers should cultivate the right attitude to work for effective instructional task performance by maintaining the clarity of job responsibilities in the university system. They should be prepared theoretically and practically in their teaching subjects.

3. Education lecturers should participate frequently in capacity building programmes with the help of ICT devices to share knowledge/ideas among themselves for knowledge creativity.

4. Government should equally make provision of ICT facilities in schools and among lecturers for knowledge building and practical task performance. These technological devices when made available would create instructional enhancement in the school system.

5. University administrators should make proper management of ICT facilities available in the school system to enhance staff and students' upgrade/development.

6. Government should make sound ICT policy/project implementation strategy in university institutions for the growth of students and institutional development.

7. University administrators should cultivate good maintenance culture in the school system for proper management of staff and ICT facilities/devices in the university institutions in South-South, Nigeria.

Contributions to Knowledge

The contributions to knowledge are as follows:

- The study had shown that, regular participation of education lecturers in human capacity building programmes using ICT devices helps them acquire new knowledge on the latest reform on instructional techniques needed for knowledge exchange.

- This study has added to data base on the impact of ICT capacity building needs of Education Lectures on their functional performances.

- Sound ICT policy implementation strategy in university institutions equips staff with the right attitude to perform efficiently in teaching and research, which promotes quality academic productivity.

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APPENDICES

APPENDIX I
Computation Of Mean Scores And Standard Deviation
Table 1:

S/N	Male (200)						Female (120)					
	SA	A	D	SD	Mean	St. D	SA	A	D	SD	Mean	St. D
1	95	95	10	-	3.43	0.47	50	65	05	-	3.38	0.60
2	97	96	07	-	3.45	0.46	55	60	03	02	3.40	0.60
3	98	99	03	-	3.48	0.46	50	55	10	5	3.25	0.62
4	88	98	10	04	3.35	0.47	45	65	07	03	3.27	0.62
5	85	80	20	15	3.18	0.48	40	50	20	10	3.00	0.64
6	80	70	30	20	3.05	0.49	50	50	15	05	3.21	0.62
7	75	85	30	10	3.13	0.48	52	63	05	-	3.39	0.60
8	30	40	50	80	2.10	0.56	20	10	50	40	2.08	0.72
9	84	96	16	4	3.30	0.47	48	67	03	02	3.34	0.61
10	90	95	10	5	3.35	0.47	50	55	10	05	3.25	0.62
11	85	95	10	10	3.28	0.47	55	55	07	03	3.35	0.61
12	80	90	20	10	3.20	0.48	50	65	03	02	3.36	0.61
13	95	95	07	03	3.41	0.47	60	55	02	03	3.43	0.59
					3.21	**0.48**					**3.20**	**0.62**

Table 2:

S/N	Federal (160)						State (160)					
	SA	A	D	SD	Mean	St. D	SA	A	D	SD	Mean	St. D
14	90	60	07	03	3.48	0.52	80	70	05	05	3.41	0.52
15	40	60	40	20	2.75	0.57	50	60	40	10	2.94	0.56
16	50	90	12	08	3.14	0.54	60	80	10	10	3.19	0.54
17	70	80	08	02	3.36	0.53	65	85	07	03	3.33	0.53
18	80	60	15	05	3.34	0.53	80	70	06	04	3.41	0.52
19	80	70	05	05	3.41	0.52	60	90	08	02	3.30	0.53
20	75	75	06	04	3.38	0.52	50	95	10	10	3.22	0.54
21	90	60	09	01	3.49	0.52	55	95	07	03	3.26	0.54
22	95	60	04	01	3.56	0.51	55	90	10	05	3.22	0.54
23	87	63	08	02	3.47	0.52	70	80	07	03	3.36	0.53
24	85	65	07	03	3.45	0.52	75	75	06	04	3.38	0.52
25	70	80	05	05	3.34	0.53	75	70	10	05	3.34	0.53
26	50	90	15	05	3.16	0.54	65	85	06	04	3.32	0.53
					3.33	**0.53**					**3.28**	**0.53**

Table 3:

S/N	Male (200)						Female (120)					
	SA	A	D	SD	Mean	St. D	SA	A	D	SD	Mean	St. D
27	90	85	15	10	3.26	0.48	55	60	03	02	3.40	0.60
28	80	90	20	10	3.20	0.48	50	55	10	05	3.25	0.62
29	75	80	25	20	3.05	0.49	53	57	07	03	3.33	0.61
30	70	90	30	10	3.10	0.49	49	61	05	05	3.28	0.62
31	75	95	25	05	3.20	0.48	52	58	08	02	3.33	0.61
32	80	90	25	05	3.23	0.48	54	56	08	02	3.35	0.61
33	85	95	15	05	3.30	0.47	56	55	05	04	3.36	0.61
34	96	94	06	04	3.41	0.46	57	57	05	01	3.42	0.60

| 35 | 92 | 96 | 08 | 04 | 3.38 | 0.47 | 53 | 58 | 08 | 01 | 3.36 | 0.61 | |
| | | | | | **3.24** | **0.48** | | | | | **3.34** | **0.61** | |

APPENDIX IV
Computation of Hypotheses Testing

Test of Hypothesis one:

$$\text{Z-cal} = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\dfrac{(SD_1)^2}{n_1} + \dfrac{(SD_2)^2}{n_2}}}$$

$$= \frac{3.21 - 3.20}{\sqrt{\dfrac{(0.48)^2}{200} + \dfrac{(0.62)^2}{120}}}$$

$$= \frac{0.01}{\sqrt{103.6/24000}}$$

$$= \frac{0.01}{0.0657}$$

$$\text{Z-cal} = \underline{0.152}$$

Test of Hypothesis two:

$$\text{Z-cal} = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\dfrac{(SD_1)^2}{n_1} + \dfrac{(SD_2)^2}{n_2}}}$$

$$= \frac{2.18 - 2.15}{\sqrt{\dfrac{(0.62)^2}{160} + \dfrac{(0.62)^2}{160}}}$$

$$= \frac{0.03}{\sqrt{0.7688/160}}$$

$$= \frac{0.03}{0.0693}$$

$$\text{Z-cal} = \underline{0.433}$$

Test of Hypothesis three:

$$Z\text{-cal} = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\dfrac{(SD_1)^2}{n_1} + \dfrac{(SD_2)^2}{n_2}}}$$

$$= \frac{3.24 - 3.34}{\sqrt{\dfrac{(0.48)^2}{200} + \dfrac{(0.61)^2}{120}}}$$

$$= \frac{-0.10}{\sqrt{102/24000}}$$

$$= \frac{-0.10}{0.0652}$$

$$Z\text{-cal} = -1.534$$