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Challenges Preventing Academic Staff from using Information and Communication Technology (s) for Teaching in the Nigerian Public Universities and the way Forward

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Abstract: Information and Communication Technology(s) is one of the major resources adopted by the universities across the world for delivering teaching and conducting researches. The academic, non-academic staff and students use information and communication technology (s) for providing academic service and administrative functions. In Nigerian public universities, academic staff have not using information and communication technologies effectively for teaching and learning processes due to many problems. The article discussed the challenges preventing academic staff from using ICT(s) for teaching in the Nigerian public universities. Secondary data were used to provide empirical support to the point raised in the article. The secondary data were sourced from print material and online publication from libraries and internet. The article identified: inadequate funding of ICT programme, inadequate ICT facilities, poor internet services, unstable electricity, high cost of ICT facilities, poor implementation of ICT educational policies, poor ICT literacy of academic staff and institutional corruption as the challenges preventing academic staff from using ICT(s) for teaching in the Nigerian public universities. To address this challenges, the article recommends as follow: adequate funding of ICT programme, provision of ICT infrastructural facilities, training and retraining programme for academic staff, subsiding ICT facilities for academic staff, ensure stable internet services, stable electricity supply, fight institutional corruption and implement all ICT policies in the Nigerian higher institutions.

Key words: Academic Staff, Challenges, ICT, Public, Universities

1. Introduction

The National Policy on Education (FGN, 2004), defines Higher Education as the Post - Secondary Section of the National education system, which is given by Universities, Polytechnics and Colleges of Technology including courses as are given by the Colleges of Education, Advanced Teachers Training colleges, Correspondence Colleges and such Institutions as may be allied to them. The higher education includes the Polytechnics, Colleges of education and universities. The universities are grouped into two namely public universities and private universities. Meanwhile, the goals of tertiary education, which include the universities, according to the National Policy on Education (2004) are: contribute to national development through high level relevant manpower training; develop and inculcate proper values for the survival of the individual and society; develop the intellectual capability of individuals to understand and appreciate their local and external environments; acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society; promote and encourage scholarship and community service; forge and cement national unity, and to promote national and international understanding and interaction. The National Policy on Education (2004) document added that the tertiary institutions shall pursue these goals through: Teaching; Research and development and community services.

The realization of the goals of universities' education depends among other thing on the availability of human and materials resources in right quality and quantities. The human resources include academic staff and non-academic staff. Academic staff remains the key member of the university's system. The roles of the academic staff in the actualization of the university programme cannot be underestimated. The academic staff is the engine room of the university system. They determine the quality of the system. The academic staff are the implementer of the school curriculum. They plan the lesson, organize the instructional resources, prepare the note and deliver the lecture.

Adavbiele (2016) observed that today, many schools in Nigeria face the developmental challenges of the use of Information Communication Technology (ICT) in terms of e-teaching and e-learning processes. Like every issue of development in the country, all universities in Nigeria are struggling to access the technology as a measure to find out academic excellent through teaching and learning. It is against this background that this article wants to discuss the preventing academic staff from using ICT for teaching and researching in the Nigerian universities.

2. Concept of Information Communication Technology (ICT)

United Nation Educational Scientific and Cultural Organization (UNESCO, 2005) viewed ICT as the combination of all the computers, telecommunication and media technologies. They are also electronic technologies used for accessing, processing, gathering, manipulating and presenting or communicating information in the education system. Obanya (2002), defined ICT as a broad term that has to do with the harnessing of process, the methods and the product of electronic communication related technologies and other related resources in today's' knowledge driven society, for enhancing the productivity, the spread and efficiency of set programme activities geared towards the achievement of clearly defined goals. According to Schiller and Tillett (2004), ICT enhances possibility by providing what teachers can do, by providing an entry point into the content and enquiries that were not possible without the use of ICT, by extending what students can to produce and because of their investigations and by providing teachers with the opportunities to become learners again. Adebayo (2013), sees information and communication technologies (ICTs) as the technology that supports activities involving the creation, storage, manipulation, communication of information using microelectronic and telecommunications tools such as laptops, computers, computer networks, Internet digital printers and mobile technology that are used by the administrator to record, store, process, retrieve and transmit information (Kokt & Koelane, 2013). World Bank (2007) noted that Information Communication Technology (ICT) involves the use of hardware, software, networks and media for the collection, storage, processing, transmission and presentation of information (voice, data, text, images etc) as well as related services. Similarly, Deebom, & Zite, (2016) viewed ICT and IT (Information Technology) are often used synonymously. However, the key difference is that IT is a subset of ICT which covers all forms of communication, including telephone mobiles etc while information technology (IT) refers to an entire industry that uses computers, networking, software and often equipment to manage information. Edozie et al. (2010) confirmed that Information and Communication Technologies (ICTs) empowerment enhances the abilities of people to use ICT to improve their life skills and strengthen their capabilities.

The roles of Information and Communication Technology(s) in the development of teaching, researching and provision of community services cannot be underestimated because Information and Communication Technology(s) is helping to solving many problems in the educational institutions, especially the university system. Information and Communication Technology(s) has made teaching and learning simple and fast. ICT is used for different purposes in the university system. ICT is used for administrative functions by the non-academic staff. Maki (2008) notes that

ICT activities relate to the management of university administration through the personnel administration of the students, resources, finance and general administration. Integration ICTs into this process enhances the overall admission activities of universities by making it more accessible to many (Kwaku & Obeng, 2004). ICT is also used by the academic staff for teaching and researching. Adavbiele (2016) and Cheung and Huang (2005) pointed out that the use of ICT as an effective teaching tool in university education as many university teachers now publish their course materials via the internet. They argued that it is insufficient for only university to use ICT for good job combination, leaving out the students' ability to do the same. Educational technologists have cited many reasons why an education system based on ICT can more effectively result in positive pedagogic outcomes than one based only on conventional techniques (Adavbiele 2016, Balanskat, Blainire and Kefala, 2006; Means et al, 1993; Roblyer and Edwards, 2000; Than, 2006 and Ting, 2005).

Kpolovie, (2010) and Tomie, (2014) submitted that ICT has disentangled the problem of the university and polytechnic lecturers with the current state of severe shortage of academic facility and staff facing our tertiary institutions. ICT could be leveraged through video conferencing so that students on various campuses pursuing the same or similar academic programs could be connected at the same time to benefit from a lesson in which they lack lecturers. The ICT is used to provide the administrative functions and management functions in the university system, which include teaching, researching, security services, health services, financial services, counselling services, maintaining services and academic services. Maki (2008), who notes that ICT activities relate to the management of university administration through the personnel administration of students, resources, finance and general administration. Magni, (2009) observed that ICTs help in providing an excellent communication system in the university system by providing timely information to all concerned. Hasan et al, (2007) opined that integrating of ICTs into general administration has brought about increased efficiency and optimal resource utilization.

For the academic staff, Information and Communication Technologies is use for preparation of lesson plan, preparation of note, e-marking, e-evaluation, e-supervision and e-feedback. The lecturers in tertiary institutions use ICT for teaching and research with additional administrative assignments. ICT adoption has the potentials of lessening the administrative duties. In teaching and learning in a university system, information and communication technologies offer many opportunities in the higher educational system (Kpolovie, 2010a; 2016). Integrating of ICTs into this process enhances the overall admission activities of universities by making it more accessible to many (Kwaku&Obeng, 2004).

For research programme in the universities, ICT is helping to coordinate national and international online conferences and submission of paper for publication.Victorand Faga (2015) and Nwokede and Sani (2009) submitted that ICT enables the researcher to have a discussion group with other researchers in his chosen area of study. Once a group is formed, all that the researcher needs to do is to post plea for ideas on his or her research topic on a "notice board" on the website. Having so many people out there, you will be surprised at the different ideas and suggestions that will come your way within split second. Hence, the internet has become an invaluable tool for learning, teaching and research. However, as excellent and important as the computer is, it has not really gained its root in our Nigerian schools, let alone the entire society. Its impact is not strongly felt by all, especially by our students. This is likely because of some challenges faced in the computer's utilization in our society (Victor and Faga 2015) while Education (2013) submitted that Information and Communication Technology (ICT) creates an impact on resource-based learning and access to real world information through the Web, ICT improves poor language skills throughword processing, ICT helps to provide reference materials for research work**,** ICT provides publisher the opportunity to learn from other publisher all over the world, Enables collaborative

learning with little indication of the isolated learner, Develops communication skills and awareness of different audiences and gives students more control.

Higher education institutions should be highly computerized, and all lecturers should be able to use ICT facilities to enhance their working methods (Kpolovie, & Awusaku, 2016, Ololube, Kpolovie & Makewa, 2015). In higher institutions of this century, learning is expected to be blended in nature where a student can assess the institutions and other libraries at the comfort of their homes. For this to be done, the lecturers and other personnel of our institutions should upgrade and updated their computer skills. In developing countries, Nigeria specifically, preface investigations prove that only a few organizations in the economy have adopted the IT, but there has not been a formal study to determine the level of diffusion and the factors affecting its efficiency on organizations (Kpolovie, & Awusaku, (2016).

3. Challenges Preventing Academic Staff from Using Information Communication Technology (ICT) for Teaching in the Universities

3.1. Inadequate Funding of ICT Programme

Inadequate funding of ICT programme in the Nigerian public universities is responsible for the poor utilization of ICT for delivering of teaching programme by the academic staff in the different higher institutions spread across the country. The funding of ICT programme is very poor and causes poor development of the ICT in major public universities across the country. Inability of the Nigerian government at every level to allocate adequate funds for the administration and management of ICT in the Nigerian higher institutions is the reasons behind why many school administrators cannot afford to purchase ICT for academic staff to be deploy for teaching, give assignment and online marking. The budgetary allocation for the entire educational institutions in Nigeria is below the 26% of the recommendation for developing countries like Nigeria to annually allocate for the administration and management of education. The inability to meet this requirement is among the basic reasons for poor development of ICT facilities in the various higher institutions in the country. The state of ICT infrastructural facilities is in comatose in many higher institutions in the country as a result of poor funding. Victorand Faga (2015) identified inadequate funds, inadequate power supply, lack of government sponsorship, time constraints, irregular organization of IT programmes, inadequate Internet cafes, too much work load for academic staff and inadequate computer training centres were discovered to be militating factors.

3.2. Inadequate Information Communication Technology (ICT)

The problem of inadequate ICT facilities in many public universities in Nigeria and lack of personal or official laptops for academic staff is another fundamental problem hindering the academic staff from using ICT for lecturing in the lecture halls. ICT facilities include PCs, web, CD-ROMs, intelligent video plate guideline, Computer Assisted Instruction, Computer Based Instruction, Computer Based Learning, e-learning, and others for educational modules conveyance have been observed to be extremely viable in instruction and learning. No any meaningful online teaching that can be done without adequate availabilities of the various ICT facilities on ground. Lewis and Smith (2002) noted that barriers to the application include limited equipment, inadequate skills, minimal support, time constraints and the teacher's own lack of interest or knowledge about computer. Okwudishu (2005) discovered that unavailability of some ICT components in the schools hampered teachers' use of ICTs. Idris (2016) did a study that assessed the implementation of computer science education in colleges of education in Kano and Jigawa State, Nigeria. The findings indicated that there was an inadequate provision of facilities and equipment for implementing Computer Science Education (CSE) in the study area, there was

inadequate manpower and funds for implementing of Computer Science Education (CSE) as well as inappropriate use of teaching methodologies.

3.3. Poor Internet Service

Internet service is what gives life to other ICT facilities to functions. In the absence of stable and quality internet service, other ICT facilities are useless. Internet services can be described as fuel that the ICT needs to operate or move. Internet service is very important to the operation and utilization of ICT facilities in educational institutions. In Nigeria, the quality of the internet services is poor and ineffective. The various internet service providers have not actually invested in the provision of quality services. The federal government agencies regulating the activities of the internet service provided are very weak, and this is responsible for the ineffectiveness in the internet service provision. Many higher institutions are not cover properly with internet services and this is affecting the application of ICT for teaching. Many academic staff with their ICT facilities cannot effectively use them because of weak internet services. In some public universities, ICT facilities have been provided in the lectures halls to aid delivering of lecture through ICT but absent or poor internet services such ICT facilities are abandon by the academic staff who are supposed to be using them for lecturing. The high cost of internet data and electronic services is basically the element of ICT usage and value and the challenge of installing ICT in Nigerian tertiary institution (Tongia & Subrahmanian, 2006). Adavbiele (2016) revealed in his study that there is a gap between the university teachers and students and ICT usage in classrooms and many university lecturers and students have to go to commercial cyber cafés in town before they have access to a computer that is internet connected, teachers face some challenges and barriers of availability of facilities which prevent them to employ ICT in the classroom.

3.4. Unstable Electricity

Unstable electricity is another challenge preventing the utilization of ICT for teaching in many public universities across the country. Electricity is key to effective application of ICT in educational institutions. Electricity is the backbone of ICT infrastructural facilities. Adavbiele (2016) Technological and science laboratories are run using electricity. Computers cannot operate without electricity even if all the equipment required is present. Several teachers today have never used computers in their lives and they are terribly shy when they are confronted with this new technology and the terminology associated with using them. Some schools do not have them provided for their teachers and some teachers may not be economically buoyant to buy one for themselves.It is unfortunate that in Nigeria that power generation for the entire over 200 million people is below 10,000 megawatt. Poor power supply is one of the major problem facing the economy of the country and the entire educational institutions. Many public universities with ICT facilities for teaching and learning cannot put it in operation because of power problem. In some schools, computer centre built or donated to them have not been put to use because there is not steady power and the cost of fuelling the generator to power the ICT facilities is very expensive. Many public universities depend on generator to carry out academic services, which is very expensive. Due to the problem posed by the power, many academic staff cannot use the limited ICT facilities installed in lectures halls to deliver lectures. According to Adavbiele (2016) and Osakwe (2012), acquisition, deployment and management of information technology resources and services for teaching depend on electricity. Studies have shown that poorly maintained equipment and poor network infrastructure are prominent obstacles to integrating ICT tools in teaching. Kwacha (2007) observed that the problems associated with the effective implementation of ICT are inconsistent electric power supply, lack of qualified ICT personnel, cost of equipment, management attitudes, inadequate telephone lines, particularly in rural areas and non-inclusion of ICT programmes in teacher's training curricula and at the basic levels of education. Iduwo-

Ogeogbea and Iyamu, (2005) who revealed that most dwellers in rural Nigeria have no access to electricity supply, thus denying schools in these areas access to any technology that requires electricity like computers and internet. They also added that the few internet hubs available in Nigeria are in towns and cities. Many researchers agreed that unstable electricity is a problem hindering the application of ICT in educational institutions (Adomi, 2005a; Adomi, Omodeko, and Otole, 2004; Adomi, Okiy, and Ruteyan, 2003).

3.5. High Cost of Information Communication Technology (ICT)

High cost of acquiring ICT facilities is another problem preventing the effective use of ICT facilities for lecturing by academic staff in the Nigerian public universities. Modern ICT facilities that are designed purposely for delivering of teaching, researching and learning are very expensive. The high cost of these facilities is preventing the school administrators and many academic staff from using ICT to carry out academic activities in the universities. Many academic staff with poor salaries and poor motivation packages cannot afford to buy ICT facilities that will aid them to deliver teaching online, prepare their notes, give assignment online and carry out research online. According to Adomi (2010), the deteriorating economic situation and the weakness of Nigeria currency against the dollar which made the prices of electronic devices to go high has made it difficult for most people and institutions to acquire computers and internet. Monthly Internet rates are exorbitant and the charges for satellite television are unaffordable for most people in Africa (Brakel and Chiseuga, 2003). Cost has been reported as one factor which influence provision and use of ICT services (Adomi, 2006). Adewale & Taiye (2018) observed that despite the enormous importance and advantages of ICTs in driving university administration, some factors such as inadequate computers, epileptic supply of electricity and high maintenance cost pose a serious challenge in making this possible thus derailing the aspiration of a nation from realizing its educational goals through university administration within the Nigerian context. Adewale & Taiye (2018) and Jagboro (2003) listed the factors responsible for the low level of utilization of ICTs at the university. These include low level of connectivity, high cost of cyber café facilities, lack of substantial online learning resources, and absence of faculty compensation for teaching online and inadequate funding. Not only that, there are challenges of awareness and mindset, lack of top-level commitment for the progress in ICT integration, a systematic method implementation, cost of bandwidth and efficient utilization of ICTs, lack of technical support, insufficient knowledge, gender, age of teacher, lack of motivation, lack of technical skills, insufficient availability of hardware/software and inability of many Nigerian teachers to be computer-literate (Adewale & Taiye 2018, Kupoluyi, 2015).

3.6. Poor Implementation of Information Communication Technology (ICT) Educational Policies

Poor implementation of ICT policies in the public universities in Nigeria is another factor preventing the academic staff from using ICT to carry out their functions of teaching, researching and providing community services. In order to take the Nigerian educational institutions to the next level where ICT will be used for teaching and learning, the Nigerian government developed and formulated many ICT policies for all the educational institutions. Agencies were created for the development of ICT software for the various educational institutions. It is amazing that as good as these ICT policies are; the implementation was not done due to many reasons which include; political instability, unstable educational policies, institutional corruptions and inadequate funding. The poor implementation of the ICT policies for the higher institutions in the country is another challenge preventing effective utilization of ICT facilities by the academic staff. As an academic staff you are entitle for personal laptop, free internet services and other ICT facilities, but the poor implementation of the policies makes it impossible for academic staff to be given their official

laptop in various higher institutions. Adavbiele (2016) cited Okhiria (2007) submitted that National Universities Commission (NUC) in Nigeria has prescribed that there should be at least one computer to every four students and one PC to every two lecturers from the grade of lecturer I, one PC per senior lecturer and one notebook per reader/ professor. NUC has gone further to establish e-learning platforms fitted with twenty smart boards in twelve Federal universities for the promotion of the use of ICT in teaching and learning. Majority of the Nigerian universities have not achieved this recommended system ratio for their faculties, though some have made giant or notable strides in campus wide area networking and e-learning course deliveries. Adomi and Kpangban, (2010) observed that the ICT policies in Nigerian public schools have not gone beyond the piloting stage.

3.7. Poor Information Communication Technology (ICT) Literacy of Academic Staff

Poor computer literacy of many academic staff is another problem preventing them from utilizing ICT facilities for teaching in their Nigerian public universities. Computer literacy is the ability to effectively use and applied computer to type, calculate, draw and carry out other activities. Computer literacy is the ability and capacity to use computer hardware and software with no external help. It is impossible to teach with ICT facilities without the skills and knowledge of computer. ICT knowledge and skills is key to successful utilization of ICT for teaching and researching in the higher institutions. It is surprising to notice that many academic staff in the Nigerian public universities do not have the knowledge, skills and competencies to operate and use ICT for teaching, preparation of lesson note, giving online assignment, marks and supervise project/thesis using online platforms. Victor and Faga (2015) carried out a study which is on the utilization of computer technology for academicwork has assessed the computer literacy skills possessed by academic staff members of the University of Jos (UNIJOS). The findings revealed that lecturers have an average level of computer literacy skills and use it only for typing/printing of lecture notes, computing of students' results, surfing the Internet for information and sending e-mails. However, Abdul-Salaam, (2012) in Oyo state, Nigeria found out that more than half of the teachers cannot start a computer, only about 15% can work with MS word and less than 10% can use MS excel, MS access, browse the internet and use the computer to teach in class. Many staff in the Nigerian tertiary institutions are not ICT computer literate and it is disappointing in this modern digital era (Idowu, Esere, &Iruloh, (2017). According to Adavbiele(2016) teacher's barriers include lack of confidence, shortage of time, and resistance to change, or to the institution (school-level barriers) effective training in solving technical problems and lack of access to resources. Teachers' use of ICT were insufficient number of computers, lack of free time for learning and lack of classroom time for students to use computers.

3.8. Institutional Corruption

Institutional corruption is another problem preventing effective utilization of ICT facilities for teaching and researching in some public universities across the country. Corruption has penetrated the Nigerian educational institutions, especially the higher institutions, which include the universities, colleges of education, polytechnics and other mono-techniques. The commonest forms of institutional corruption in the Nigerian higher institutions is educational funds diversions. Funds allocated for ICT infrastructural facilities and other educational services ended up been diverted by some officials or school administrators in the higher institutions. The inability to provide those ICT facilities for those that are supposed to be using them to teach is affecting the utilization of ICT for teaching by the academic staff.

5. Way Forward

The following have been put forward to address the challenges identified in this paper: adequate funding of ICT programme, provision of ICT infrastructural facilities, training and retraining

programme for academic staff, subsidizing ICT facilities for academic staff, ensure stable internet services, stable electricity supply, fight institutional corruption and implement all ICT policies in the Nigerian public universities.

a. The government at both federal and state government should increase the funding of public universities in the country and direct all the school administrators to increase the budgetary allocation for ICT programmes in their various schools;

b. More adequate ICT facilities should be provided in all the public universities in the Country. This will enable academic staff to use ICT facilities for delivering of teaching programmes in their respective institutions;

c. No meaningful teaching can take place via ICT facilities if majorities of the academic staff are not computer literate. So, the government through National Universities Commission should design training programme for all the academic staff in the Nigerian public universities. This will enable them to use ICT facilities for teaching and researching;

d. The government should negotiate with different ICT facilities manufacturers across the country and subsidize the price of ICT facilities for schools, academic staff and students. This will help to boost the application of ICT facilities for teaching in the higher institutions across the country;

e. The government should provide facilities for internet services providers in the country to enable them to invest in the capacity of the facilities and increase the quality of their internet services in the country. This will help to make it possible for teaching with ICT;

f. The government should provide financial facilities for energy provider in the country to enable them increase the quality and capacity of their facilities. This will help to ensure steady and improved power supply in the country. Special attention should be given to locations where higher institutions are in the country;

g. The government should fight all institutional corruption in the ministries and higher institutions across the country through the use of anti-corruption agencies;

h. The government should implement all the ICT policies concerning higher institutions in the country. This will aid in effective use of ICT by academic staff in the Nigerian higher institutions.

6. Conclusion

In conclusion, the roles of Information and Communication Technology(s) in the development of teaching, researching and provision of community services cannot be underestimated because Information and Communication Technology(s) is helping to solving many problems in the educational institutions especially the university system. Information and Communication Technology(s) has made teaching and learning simple and fast. However, in Nigerian public universities, there are still problems preventing academic staff to use Information and Communication Technology(s) for teaching and researching. The article examined challenges and identified the following; inadequate funding of ICT programme, inadequate ICT facilities, poor internet services, unstable electricity, high cost of ICT facilities, poor implementation of ICT educational policies, poor ICT literacy of academic staff and institutional corruption as problem preventing academic staff from using Information and Communication Technology(s) for teaching and researching in the public Universities in Nigeria. To address these challenges, the paper recommends: that adequate funding of ICT programme is essential, provision of ICT infrastructural facilities are necessary, there should be training and retraining programme for academic staff,

subsiding ICT facilities for academic staff, ensure stable internet services, stable electricity supply, fight institutional corruption and implement all ICT policies in the Nigerian higher institutions.

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