AJAMATES

African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.6, May-August, 2022 https://ajemates.org

ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) FOR PROMOTING QUALITY TEACHING AND LEARNING FOR EXCELLENCE IN NIGERIAN HIGHER EDUCATION INSTITUTIONS

Ulioyo Tonwe (Ph. D)
National Open University of Nigeria (Noun)
Asaba Study Centre; Delta State
Mobile Line: 08036743700; E-MAIL: uac4christ@gmail.com

ABSTRACT

The use of various information and communication technologies (ICTs) which is recently been felt and experienced in the Nigerian education sector are making significant impact in boosting quality education in the sector. In the Nigerian higher education institutions, the use of various information and communication technologies has been recognized as effective tools or gadgets utilized in promoting quality teaching and learning for excellence. The significant role(s) of the ICTs in promoting quality teaching and learning has been discussed previously by different scholars and researchers in many literatures. This paper however discussed the role of information and communication technologies (ICTs) for promoting quality teaching and learning for excellence in Nigerian higher education institutions. Further discussed in the paper were the meanings of some key concepts used in the paper such as information and communication technologies (ICTs), quality teaching and learning, excellence and higher education institutions. Various information and communication technologies that can be used for promoting quality teaching and learning for excellence in Nigerian higher education institutions were also mentioned. The paper discussed the role of information and communication technologies in promoting quality teaching and learning for excellence; looking at the benefits of ICTs in higher education institutions from previous empirical studies. Finally, the impediments to the use of ICTs in teaching and learning for excellence in higher education institutions was discussed in the paper, which lead to the concluding section of the paper and way forward highlighted as well.

Keywords: Role, Information, Communication, Technologies, (ICTs), Promoting, Quality, Teaching, Learning, Excellence, Nigerian, Higher, Education, Institutions

Introduction

The Nigerian higher education institutions are citadel of learning established to train and prepare the requisite manpower for sustainable national development in the country. Higher education institutions equally known as tertiary education institutions are created to in order to offer full-time programmes, part-time, block release, day-release and sandwich programmes to cater for different individuals' intentions and dispositions in the Nigerian society (Federal Republic of Nigeria, FRN, 2013). The Nigerian higher education institutions are also known for the generation and dissemination of knowledge, skills and competencies through quality practical and theoretical teaching and learning, research and development, consultancy, provision of high standards in the quality of facilities, services and resources likewise publications, in order to contribute to national and local economic goals that enable students' or graduates to succeed in a knowledge-based economy (Federal Republic of Nigeria, FRN, 2013). Given the important roles and benefits of the Nigerian higher education

institutions in the national economy and sustainable national development, there is the need for the tertiary education institutions to maintain high educational standards through excellence in teaching and learning which is equally obtainable through the use of technological tools and gadgets like the information and communication technologies (ICTs). Today, the use of modern technologies in all sectors of the society is no longer a new thing. Various sectors, including education, are beginning to efficiently utilize the ICTs in promoting quality and excellence in teaching and learning. Hsu (2013) observed that within the education context in particular, it is becoming increasingly crucial for teachers to use technology owing to the digital school environment they are exposed to which utilizes computers, printers, scanners, digital cameras and the internet and it is not uncommon to find that teachers have access to communication software mounted on their mobile phones. Supporting the above statement of Hsu (2013), Alfawaz and Ibrahim (2018) noted that today, information and communication technologies have entered every aspect of people's lives, so that radical changes should take places to cope with these changes particular in, education, market and communications.

The unique advances in the field of ICT have impacted the field of education more than any other field. Rapid advances in information and communication technologies have created unprecedented opportunities in the field of education and have had a profound effect on the way teachers teach and how learners learn. As regards, mastering ICT skills and utilizing ICT towards creating an improved teaching and learning environment is of utmost importance to teachers in creating a new learning culture (Alfawaz & Ibrahim, 2018). Again, the use of information and communication technologies (ICTs) in promoting teaching and learning in the Nigerian higher education institutions has a legal backing as indicated by the Federal Republic of Nigeria (FRN, 2013) in the National Policy on Education (NPE) document under section 5, p.47 and 48, where it was stated that tertiary education institutions shall provide technologically based skills training that ensures students understanding of how their expertise fits to improving the society and fulfilling national goals. Therefore, the informational technology (IT) is highly encouraged in order to boost the quality of teaching and learning for excellence in the tertiary education institutions. The potentials of ICT in promoting excellence in teaching and learning has led to the Federal Government introduction of ICT education policy which deems it necessary that such issues concerning ICT infrastructure; curriculum and content; training and capacity development; planning; procurement and administration be put into considerations. It also pays attention on the management, support, sustainability, and monitoring and evaluation. The policy states that ICT is to be taught as a subject, and integrated as a pedagogical tool for teaching and learning for excellence in other subject areas in higher education institutions (FRN, 2013; Osei, Larbi & Osei-Boadu, 2014). As regards to the above statements, the information and communication technologies (ICTs) are effective tools to boost quality education leading to excellence in the Nigerian higher education institutions. No quality education or qualitative teaching and learning can occur in this 21st century technological age in the higher or tertiary education institutions without the assistance of technological tools and gadget like the information and communication technologies (ICTs). The use of information and communication technologies (ICTs) in teaching and learning for promotion of excellence in the Nigerian higher education institution can simply be visualized as the use of computerized and sophisticated electronic devices and materials for effective instructional delivery which will lead to quality dissemination and acquisition of knowledge, skills and competences for the benefits of the students who

are recipients of this education and equally the society. Therefore, the benefits in the use of ICTs for promoting quality teaching and learning for excellence cannot be overemphasized as identified by such scholars like (Hsu, 2013), Walubita and Mulauzi (2016), among others. This has equally supported students and teachers in the lecture rooms.

The use of ICT aids proper dissemination of teaching which brings out the reality of the lecture presented. It supports adequate retention of knowledge, provides in-depth understanding of a particular or difficult concepts, among many other benefits. Given, the important roles and benefits of utilizing the ICTs in promoting quality teaching and learning in the Nigerian higher education institutions, there are still many impediments towards the use of ICTs promoting quality teaching and learning for excellence in the Nigerian higher education institutions. This paper has been therefore, created to discuss issues surrounding the role information and communication technologies (ICTs) for promoting quality teaching and learning for excellence in Nigerian higher education institutions. Various sub-themes or headings have been arranged and created as a matter of discourse on the topic in the paper.

Meaning of Some Key Concepts

Information and Communication Technologies (ICTs)

The ICTs is an acronym which has a wider meaning and known as the information and communication technologies representing the use of different technologies and networks that can electronically be accessed, stored, transmitted and retrieved at any point in time. The Information and communication technologies (ICTs) as defined by Walubita and Mulauzi (2016) are electronic or digital technological tools which includes communication hardware and software materials, mobile phones and multimedia, among others; and can be used to develop the human possibilities and to organize the world. Alfawaz and Ibrahim (2018) opined that ICT centers on the use of such technologies like the computers, information, communication and multimedia technologies, which is often interpreted as the beginnings of a knowledge or information society. Chitale and Thakar (2015) described the ICT as unified communication and the integration of telecommunications, computers which enable users to access, store, transmit, and manipulate information. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system.

Information communication technologies (ICTs) are information handling tools that are used to produce, store, and process, distribute and exchange information. These different tools are now able to work together, and combine to form networked world- which reaches into every corner of the globe (UNDP Evaluation Office, 2001). To Ogunsola (2005:3) ICT "is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live and the environment in which we live". It can be used to access global knowledge and communication with other people (Ogunsola, 2005:3). Today, the use of ICT has permeated in every walk of life and is becoming simpler to use devices such as desktop, palmtop, iPad, iPod, and mobile. Due to emergence of knowledge based society, today, information is flooded different forms. ICT in education can be used for developing major key competencies which are required in different walks of life. Information and Communication Technologies (ICTs) can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration (Chitale & Thakar, 2015). The idea that teaching and learning can successfully take place through the application of electronic

communication facilities between teachers and students is one which had generated, sometimes, hope that many more learners can be reached at a more convenient pace using the ICT (Olakulehin, 2007). Students who use and are exposed to various ICTs tools gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom. In addition, through the use of various ICTs, students extend and deepen their knowledge, investigation, and inquiry according to their needs and interest when access to information is available on multiple levels (Apple Computer, 2002). Therefore, quality teaching and learning is very possible through the use of ICTs.

Quality Teaching and Learning

Quality teaching and learning are three different terms pulled together. Quality describes something which has fitness for purpose and transformation, worth or appropriateness to produce good results so as to achieve stated objectives and goals. The term quality as defined by Kis (2005) means a lot of things. For Kis, quality entails something with an exception, perfection, fitness for purpose, value for money and transformation. Quality being something exceptional (exception) means distinctive, embodies in excellence, passing a minimum set of standards. Perfection deals with zero defects, getting things right the first time (focus on process as opposed to inputs and outputs); while fitness for purpose relates quality to a purpose, defined by the provider. In value for money, quality focuses on efficiency and effectiveness, measuring outputs against inputs. Transformation under quality entails a qualitative change; education is about doing something to the student as opposed to something for the consumer. Includes concepts of enhancing and empowering, democratization of the process, not just outcomes. Going by this definitions, quality is something that would lead to standardization, excellence and goal achievement of any educational institution. According to Babalola, Adedeji and Erwat (2007), quality is a multidimensional concept considered as fitness to purpose in relation to the user and customer needs. It can also be taken to mean the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. Quality is also that a product conforms to standards, specifications or requirements. Product in education here means tangible item referring to the output manufactured, that is graduands who are awarded certificates having fulfilled all stipulated requirements. They are attested to the possess knowledge and skills with which they can impact society. As regards, the quality of an education system like higher education institutions can be measured by certain variables which includes the teaching and learning environment together with various management activities (educational processes) and students' outcomes (graduands) who should be able to go out to the society and prove their worth by their level of performance in the competitive labour market (Adedeji & Erwat, 2007). The definitions of quality have necessitated defining the concepts of teaching and learning. Teaching and learning are among the educational activities or processes that takes place in the higher education institutions. Teaching as described within the context of the paper means the act of guiding or instructing students to learning. Without teaching in higher education institutions, learning cannot take place. Teaching as defined by Sequeira (2012) is a set of events, outside the learners which are designed to support internal process of learning. Teaching is equally an instruction is outside the learner. According to Prozesky (2000), teaching can be referred to as helping other people to learn. Teaching equally entails activities done in order to facilitate students learning. Teaching is the process of attending to people's needs, experiences and feelings, and intervening so that they learn particular things, and go beyond the given. Learning on the other hand, to Prozesky involved any activity which leads to a

change in behaviour. Learning as described in the paper deals with acquisition of new ideas, information, skills and competences through teaching in order to create changes on the recipient or student**. Learning** can be defined as the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something. Learning is about what the students does, not about what the teachers does.

Sequeira (2012) defined learning as a relatively permanent change, usually brought about intentionally. Learning is all about a change; the change brought about by developing a new skill, understanding a scientific law, changing an attitude. The change is not merely incidental or natural in the way that our appearance changes as we get older. Learning is internal to learners. Given the above definitions of teaching and learning, it is the responsibility of a professional teacher to ensure that he utilizes all resources like the ICTs to support his teaching in order to promote learning which will guarantee quality teaching and learning for excellence. The effectiveness of teaching is not only determined by the teachers' skills alone but also the teaching methodologies which includes the use of modern technological tools such as the ICTs. From all the foregoing explanations, maintaining a high level of quality in the teaching and learning process therefore, is one sure root towards ensuring that a certain amount of degree of excellence is obtainable, attainable and sustainable in the higher education institutions.

Excellence

The word excellence as described in this paper is more that quality; it is ranked as the extreme of high quality (that is, best quality or perfection) or something which is extremely worthwhile and of high standard. Ojeme (2013) defined excellence as possessing good qualities in high degree. Individuals or higher education institutions of excellence are people or institution of exploit and impact. Such people or institution of excellence will keep placing a demand on themselves for greater impact. Excellence, according to Ojeme (2013) is not about the end but the means. For higher education institutions to achieve teaching and learning excellence, then, they should be able to maintain a certain high degree of standards and quality in their instructional delivery. Excellence in teaching and learning is usually determined by certain factors which includes students' outcomes and academic achievements. According to Bruson, Patricia, Motova and Tavares (2014), excellence in teaching and learning in higher education institutions is determined by factors such as the inspirational nature of individual lecturers, the organization of presentations, the interaction with students as participants and how well the information provided meets the learning objectives of the course. Excellence can be identified both in terms of student satisfaction and also in terms of the performance of students in assessment. Excellent teaching and learning may be seen as the efficient presentation of information which maximizes the students' opportunities to gain the highest marks from the course. Alternatively, excellence could be recognized as the stimulus for students to engage with the subject and to enhance their understanding and knowledge.

Higher Education Institutions

Higher education institutions as described in this paper are citadel of learning with formalized structures with the mandate of training different manpower and professionals for a country's national development. The Federal Republic of Nigeria (FRN, 2013) described the higher education institutions as institutions that offer education after post basic education in institutions such as the universities and inter-university centres like the Nigeria French Language Village, Nigeria Arabic Language Village, National Institute of Nigerian Languages, institutions such as Innovation Enterprise Institutions (IEIs), and colleges of education, Monotechnics, polytechnics

and other specialized institutions such as College of Agriculture, School of Health and Technology and the National Teachers' Institutes (NTI). Higher education institutions have certain goals which include: contributing to national development through high level manpower training; providing accessible and affordable quality learning opportunities in formal and informal education in response to the needs and interests of all Nigerians; providing high quality career counselling and lifelong learning programmes that prepare students with the knowledge and skills for self-reliance and the world of work; reducing skill shortages through the production of skilled manpower relevant to the needs of the labour market; promoting and encouraging scholarship, entrepreneurship; forging and cementing national unity; and promoting national and international understanding and interaction. All these goals of higher education institutions cannot effectively be achieved without promoting quality teaching and learning for excellence through the use of various information and communication technologies.

Various Information and Communication Technologies for Promoting Quality Teaching and Learning for Excellence in the Nigerian Higher Education Institutions. Recently, there are a wide range of ICT tolls that can be effectively utilized in promoting quality teaching and learning for excellence in higher education institutions. A lot of this ICTs have been mentioned in different studies and articles as they include the use of software and hardware materials in teaching and learning. Adedokun-Shittu, Ahmad, Othman and Ahmad (2012) gave few examples of these ICTs as using hardware equipment like laptops, desktops, ipads, printers and scanners, photocopiers, television including smart television sets, radio cassette players and tape recorder, DVD players, LCD, electronic whiteboard, internet modems, projectors, CD-ROMs and flash drives. Others include software materials and applications such as the PowerPoint, Microsoft word, Excel spreadsheet, internet services, computer-based/assisted instructions (CBI), videoconferencing, teleconferencing, among others.

Walubita and Mulauzi (2016) gave examples of these ICTs which can be utilized in teaching and learning as computers, laptops, printers, scanners, digital cameras, communication software mounted on mobile phones, computer-assisted instruction (CAI), the internet, smart board/interactive whiteboard, fixed telephone networks, simulations/modeling and software/digital learning games, multimedia such as projectors, audio-video and so on. According to the above mentioned scholars, computer-assisted instruction (CAI) offers pictures and sounds to support the natural ways that young children learn. Also, using computers improved the motivation of young elementary children in the writing process, show to improve learning outcomes in the classroom with the help of technology. Maisamari, Adikwu, Ogwuche and Ikwoche (2018) identified the computer, email, internet, digital camera, scanner, video equipment, digital projector, digital calculator and digital printer as ICTs used in teaching and learning. All these ICTs play significant roles in promoting quality teaching and learning for excellence in the Nigerian higher education institutions.

Role of Information and Communication Technologies in Promoting Quality Teaching and Learning for Excellence in the Nigerian Higher Education Institutions. The ICT has been playing significant and magnificent role in promoting the quality of instructions, teaching and learning in the higher education institutions. The Nigerian higher education institutions are popularly known to provide quality education through their effectiveness in teaching and learning, quality research and consultancy. The ICT, by making significant impact in these mentioned areas have boosted students learning, lecturers' competences

in the classroom during their presentations. The ICTs like the computers and internet facilities are very effective tools which act as innovative materials and search engines in different subject areas and fields in order to provide the necessary information that will support effective instructional delivery in the lecture halls. According to Sudhir (2015), the ICT develops pedagogical skills, for bringing innovations in teaching-learning process. It improves the perception and understanding of the world of students to the teacher. ICTs are potentially powerful tools for extending educational opportunities; it brings more materials and resources for classroom interaction. Quality enhancement in teaching and learning in all educational endeavours can be reassured with ICT. ICT as a knowledge resource provides access to different sources of information to teacher and student the key component of education system. Teaching-learning process is made interactive by integrating information and communication technology in the classroom.

Walubita and Mulauzi (2016) opined that among the numerous expectations for the modern 21st century teachers are supposed to make learning more interesting and meaningful to students and to teach students to solve complex problems across several subject areas. One of the fundamental question for teachers is how they can meet these expectations which is presently difficult without the use of ICT. In responding to this question, Walubita and Mulauzi affirmed that educators are encouraged to recognize the emerging potentials and role of ICTs to enhance the students' potentials to learn and teachers' ability to teach effectively (Walubita & Mulauzi, 2016). Abolade and Yusuf (as cited in Tella, Adeyinka, Adedeji, Adika & Toyobo, 2007) opined that ICTs are essential tools in any educational system whose potentials are being used to meeting the learning needs of individual students, promote equality of educational opportunities, offer high quality learning material, increase teachers self-efficacy and independence in order to improve teachers' professional development. Teachers including lecturers in higher education institutions are however aware of the role and potentials that the use of ICTs offer in pedagogy. They are used to revolutionize teaching and learning and could bring advancement that would improve education dramatically. Jegede (as cited in Alfawaz & Ibrahim, 2018) attested that ICT is now recognized as an essential ingredient for creating and supporting the 21st century teaching and learning environment. The use of modern technological tools and devices such as computers, telecommunication devices, network systems and the internet are still on their infancy stage in most developing and emerging nations in Africa, Nigeria inclusive. However, across Africa, many countries have started investing considerable amount of resources and designing new policies aimed at enabling education stakeholders to embrace the use of ICT in educational institutions. Alfawaz and Ibrahim (2018) also identifying the role of ICT in promoting quality teaching and learning for excellence posited that the efficient use of ICTs in teaching and learning greatly facilitate the acquisition and absorption of knowledge, providing unprecedented opportunities to improve educational systems, improve policy formulation and execution, and ICTs can widen the range of opportunities and open access to knowledge in ways unimaginable not long ago. Alfawaz and Ibrahim also mentioned that, improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education including teaching and learning for excellence in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment. In order to boost constructive and integrated teaching and learning,

ICT is highly needed in the higher education institutions classrooms.

Citing instances with how ICT tool can be used in motivating higher education institution students to learn, Alfawaz and Ibrahim (2018) pointed out that ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and reliable content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become involved in the lessons being delivered. More so than any other type of ICT, networked computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events and facilitating the acquisition of basic skills. The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice (Alfawaz & Ibrahim, 2018). Educational television programmes such as Sesame Street use repetition and reinforcement to teach the alphabet, numbers, colours, shapes and other basic concepts. Most of the early uses of computers were for computer-based learning (also called computer-assisted instruction) that focused on mastery of skills and content through repetition and reinforcement. ICTs have also been used to improve access to and the quality of teacher training. Furthermore, the use of ICTs in education also shifts the learning approaches. There is also a common belief that the use of ICTs in education contributes to a more constructivist learning and an increase in activity and greater responsibility of students. This limits the role of the teacher to supporting, advising, and coaching students rather than merely transmitting knowledge. The gradual progress in using computers changes from learning about computers, to learning computers, and finally to learning with computers (Alfawaz & Ibrahim, 2018). All the above discussions therefore, showcases that the ICTs are effective tools that can promote quality teaching and learning in higher education institutions. Use of ICTs in teaching and learning has lots of benefits as confirmed by some empirical studies indicated below.

Benefits of ICTS in Higher Education Institutions from Previous Empirical Studies:

Globally, use of various ICTs in higher education institutions has a lot of benefits which cannot be overemphasized. Scholars and researchers through different studies and literature have proven that the use of ICTs in education coupled with teaching and learning promotes the quality of instructional delivery which leads to aid excellence. For instance, the two important elements of teaching and learning which are content and pedagogy are joined together when technology is used in lesson. If students are offered series of websites or ICT tools (like the computer, smart phones, CD ROMs, multimedia, audio-visual, computer-based/assisted instructions, among others) then the teaching and learning experiences are made effective leading to excellence (Buabeng-Andoh, 2012). The previous studies of Bordbar conducted in (2010), Lai and Pratt in (2004), Lau and Sim in (2008), Rogers (2003) and UNESCO (2008), (as cited in Osei, Larbi & Osei-Boadu, 2014) confirmed that information technology is an essential part of a lifelong interest in learning in education and helps to accomplish task with minimum input. The aforementioned researchers admitted that, appropriate use of ICT can stimulate the development of higher cognitive skills, deepen learning as contribution to the acquisition of skills for all lifelong. ICT can be used in kindling students' interest in learning, enhancing recall of previous learning, providing new stimuli, activating the learner's response, and providing systematic and steady feedback. Moreover, UNESCO study

(as cited in Osei, Larbi & Osei-Boadu, 2014) found out that, teachers' who use of ICT played a unique and complementary role in technological literacy, knowledge deepening, knowledge creation, teaching pedagogy, professional development, curriculum and assessment, and school organization and administration. Langlois (2001) report from a study indicated that using ICTs in teaching is less expensive, enables lessons to be introduced speedily, provide consistent message, make possible working from any location anytime updating contents easily and quickly; they increase learners' retention and management of large group of students. It was found out that ICTs increase both the productivity of lecturers and secondary school teachers; help teachers to be more effective and productive; increase teachers' interest in teaching; assist teachers in reorganizing and restructuring their course(s); increase teachers' emphasis on individualized instruction; provide teachers with the opportunity to experiment with emerging technologies thus providing multi-media presence in the classroom; and also provide teachers with increased opportunities to collaborate and network with colleagues (Tella, 2007). In a study on application of information and communication technologies in the management of public and private universities in Nigeria, Okorie, Agabi and Uche (2005) found out that although public universities exhibited moderate capacity for adopting modernized information management, while private universities demonstrated a high capacity of ICTs adoption; however, integrating ICTs into all areas of university life enhanced students' learning, lecturers' teaching, research, and general administration. The study of Walubita and Mulauzi (2016) found out that children who use computers have been found to show greater gains in intelligence, structural knowledge, problem solving, and language skills compared with those who do not use technology in their learning. All these empirical studies have shown that the ICTs indeed do serve as effective tools for promoting teaching and learning for excellence in higher education institutions.

Impediments towards the Use of ICTS in Promoting Quality Teaching and Learning for Excellence in the Nigerian Higher Education Institutions

Given the benefits and important roles of ICT in the Nigerian higher education institutions, yet, many of these institutions are yet to efficiently and effectively utilize the ICT to promote quality teaching and learning for excellence, due to certain impediments. The above situation is underscored by Lau and Sim (2008) who reported that despite the benefits accrued to the use of ICT for educational purpose, many teachers are still not fully ICT compliance. Previous studies have also revealed that secondary school teachers lack proficiency skill in use of ICT as a pedagogy tools in teaching and learning. Moreover, the use of ICT in secondary schools can really improve students' conceptual understanding, problems solving and team working skills. Realizing all these importance, policy makers and government have device many reforms and strategies towards effective implementation of ICT in education institutions in Nigeria and other Africa countries (Manduku, Kosgey & Sang as cited in Osei, Larbi & Osei-Boadu, 2014). Additionally, Osei, Larbi and Osei-Boadu, (2014) added that despite all their effort, the implementation of ICT in schools is still not effectively adopted to support learning and teaching as intended. Jimoyiannis and Komis equally cited in Osei, Larbi and Osei-Boadu, (2014) lamented that most of the reforms and strategies in schools fail due to their top down approach that fails to take into consideration teachers' interest and skills as well as existing knowledge. Oyebisi (as cited in Tella, Adeyinka, Adedeji, Adika & Toyobo, 2007) argued that the information and communication technology in Nigeria has not attained the required height due to some many impediments and

challenges; which is affecting the use of information and communication technology in education sector of the country. Not like in some of those studies that have been conducted on the uses of ICT by teachers which were carried out in develop countries like United Kingdom, United State of American and some Asian countries where the use of ICTs was discovered to have come of age, and resources and materials were found to be sufficient in order to maintain them (Tella, Adeyinka, Adedeji, Adika & Toyobo, 2007).

Alfawaz and Ibrahim (2018) added that the use of technology and how technology are incorporated to support teaching and learning for excellence in higher education institutions in both Nigeria and in today's world have become worrisome and very essential (Alfawaz & Ibrahim, 2018). As further attested by Alfawaz and Ibrahim (2018) the functions of teachers including lecturers in the higher education institutions is of paramount interest especially when considering teaching and learning process as the acquisition of knowledge and skills by individuals to enable him/her become useful member of the society. The effective implementation or incorporation of ICT in higher education institutions is a multifaceted complex process that does not involve only providing the technology to schools but also involves teacher's competences, school readiness, long term financing and curriculum restructuring (Zaman, Shamim & Clement cited in Alfawaz & Ibrahim, 2018). Teachers are primary agents of educational innovation; therefore, ICT skill among school teachers should be seen as an invaluable prerequisite that would facilitate the rapid teaching and learning procedure in this modern age of information explosion. Generally, the poor use of ICTs in teaching and learning is responsible by some factors like poor financing, inadequate access to ICT facilities and equipment, incompetency, unpreparedness and negative attitude of teaching staff in utilizing ICT in the classrooms, management lack of interest in providing ICT tools and constant training and retraining for teachers, among others. Osei, Larbi and Osei-Boadu (2014) confirmed in a study that factors such as inadequate time to use ICT in class, lack of training in computer for teachers as in-service training, little previous knowledge about ICT before joining the teaching profession, inaccessibility of computers in the schools and management ignorant about teachers' adoption of ICT in classroom are the key barriers to institutions adoption of ICT in teaching and learning for excellence. Buabeng-Andoh (2012) in a study grouped these impediments into several factors of personal characteristics, teachers' attitudes towards technology, ICT competence and self-efficacy - that is, the ability to handle a wide range of varying computer applications for various purposes, gender differences, teaching experiences, teacher workload, institutional support on use of ICT, teachers level of professional development towards integrating ICT in the classroom, accessibility to ICT facilities and resources, technical and leadership support for use of ICT, among others; when not appropriately administered determined the use of ICT in schools. Buabeng-Andoh further explained that personal characteristics such as educational level, age, gender, educational experience, experience with the computer for educational purpose and attitude towards computers can become impediments and influence the adoption and use of a technology. Another factor that can become an impediment is teacher preparedness to use ICT in the classroom.

Schiller (as cited in Buabeng-Andoh, 2012) opined that teachers should be implored to adopt and integrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICT into teaching determines the effectiveness of the technology and not by its sheer existence in the classroom. The attitudes of teachers towards the use of technology greatly influence their utilization or adoption and integration of computers into their teaching. According to Buabeng-Andoh (2102) study, anxiety, lack of confidence and competence

and fear often implies ICT takes a back seat to conventional learning mechanisms. Therefore, an understanding of personal characteristics that influence teachers' adoption and integration of ICT into teaching is relevant to avoid becoming impediments to the use of ICT in higher education institutions. A few previous studies of those of Martin (2013) and Victoria (2013) (as cited in Oni, Haruna &Amugo, 2017) supports Buabeng-Andoh (2012) study; these study reported that most schools both private and government, do not offer ICT training or retraining programmes to teachers which is also a challenge to their usage. Teachers' anxiety over being replaced by technology is a major hindrance affecting teachers' readiness in the use of ICT in schools. Also, slow access to basic ICT equipment; low internet connectivity and computers are barriers or impediments to the effective use of ICT in educational institution (Tella, Adeyinka, Adedeji, Adika & Toyobo, 2007). From all the foregoing therefore, there are certainly implications or consequences if all these impediments towards the use of ICT in higher education institutions are not eradicated or curbed. This situation will continue to prevent or jeopardize quality teaching and learning to effectively occur in the institutions, therefore, having negative consequences on attaining excellence in the institutions. For quality teaching and learning for excellence in higher education institutions, effective use of various ICTs in teaching and learning must be highly put into considerations and well incorporated in the higher education institutions.

Conclusion

Promoting quality in teaching and learning is vital for attainment of excellence in higher education institutions in Nigeria. Achieving the goals and objectives of higher education needs support from various angles or sources and this cannot be possible where modern technological resources like the ICTs are not sufficiently and effectively utilized in the teaching and learning activities/situations. As regards, the use of such information and communication technologies such as the computers, smart phones, multimedia devices, other hardware and software materials and applications is beneficial to the management of qualitative teaching and learning environment in the higher education institutions. This will bring about quality, high standards and excellence in teaching and learning processes in higher education institutions. Hence, the need for different stakeholders in the Nigerian higher education institutions to effectively promote quality teaching and learning for excellence through their consistency in utilizing various information and communication technologies (ICTs).

Way Forward

Given the important and significant roles of the ICTs in supporting and promoting quality teaching and learning for excellence in Nigerian higher education institutions, yet, this process has not been effectively utilized in supporting the teaching and learning activities for excellence in the institutions. There is need for certain considerations to be given as way forward in order achieve quality teaching and learning for excellence in the Nigerian higher education institutions. Hence, the following way forward are projected:

1. For information and communication technologies (ICTs) to play magnificent role in promoting quality teaching and learning for excellence in the higher education institutions, adequate finance which will aid the provisions of various ICTs to support quality teaching and learning through government, non-governmental agencies and the private sectors should be highly encouraged.
2. Academic staff of higher education institutions must have adequate access to the various ICTs that will support promoting quality teaching and learning for excellence in the higher education institutions.

3. Constant and frequent in-service training on the use of various ICTs in promoting teaching and learning for excellence in the Nigerian higher education institutions should be organized for academic staff to keep them abreast and updated on the ICT usage which promotes students learning in teaching various courses and different fields of studies in the higher education institutions.
4. Leadership and management of the higher education institutions should ensure that they employ effective maintenance strategies in order to promote quality teaching and learning for excellence in the Nigerian higher education institutions.

References

Adedokun-Shittu, N.A., Ahmad, I.S., Othman, J. & Ahmad, T.B.T. (2012). The deployment of ICT facilities in teaching and learning in Higher Education: a mixed method study of its impact on lecturers and students. *Journal of Applied Computing, 8* (1), 5-11. Retrieved from https://www.researchgate.net/.

Alfawaz, K.M. & Ibrahim, E.I.M. (2018). The role of information and communications technology (ICT) in developing English language teaching from teacher's perspective. *International Journal of Emerging Trends in Engineering Research, 6* (9), 62-73. Retrieved from http://www.warse.org/IJETER/static/pdf/file/ijeter01692018.pdf.

Apple Computer (2002). The impact of technology on students' achievement. Retrieved from http://www.aple.com/education/research/index2.html.

Babalola, J.B., Adedeji, S.O. & Erwat, E.A. (2007). Revitalizing quality higher education in Nigeria: Options and strategies. In J.B. Babalola, G.O. Akpa, A.O. Ayeni & S.O. Adedeji (Eds.). *Access, equity and quality in higher education,* p.241-253. Nigeria Association of Educational Administration and Planning (NAEAP) Publications.

Bordbar, F. (2010). English teachers' attitudes toward computer assisted language learning. *International Journal of Language Studies,4* (3).

Bruson, M., Patricia, P., Motova, G. & Tavares, O. (2014). *The concept of excellence in higher education*. Brussels, Belgium: European Association for Quality Assurance in Higher Education. Retrieved from https://www.researchgate.net/publication/.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using Information and Communication Technology (IJEDICT) 8,* 1, 136-155.

Chitale, C.M. & Thakar, S.S. (2015). Use of ICT in school education. In G.R. Angadi (Ed.). *Information and communication technology in education,* p.8-18. New Delhi: A.P.H. Publishing Corporation.

Federal Republic of Nigeria (FRN, 2013). *National policy on education, sixth edition.* Lagos: NERDC.

Hsu, P.S. (2013). Examining changes of preservice teachers' beliefs about technology integration during student teaching. *Journal of Technology and Teacher Education, 21* (1), 27-48.

Kis, V. (2005). *Quality assurance in tertiary education: Current Practices in OECD countries and a literature review on potential effects*. Retrieved from www.oecd.org/edu/tertiary/review.

Lai, K.W. & Pratt, K. (2004). Information communication technology (ICT) in secondary schools: The role of the

computer coordinator. *British Journal of Educational Technology,35* (4),461-475.

Langlois, C. (2001). *Sharing knowledge and experience in implementing ICTs in Universities.* Report of IAU/UNSCO information centre on higher education, International Association of Universities. EAU/IAU/IAUP Round Table. Skagen.

Lau, B.T. & Sim, C.H. (2008). Exploring the extent of ICT adoption among secondary school teachers in Malaysia. *International Journal of Computing and ICT Research, 2* (2), 19-36.

Maisamari, A.M., Adikwu, V.O., Ogwuche, C.O. & Ikwoche, F.I. (2018). Assessment of secondary school teachers' use of information and communication technology (ICT) in Anyingba Metropolis, Kogi State, Nigeria. *Journal of Education & Entrepreneurship. Formerly Journal of Educational Policy and Entrepreneurial Research, 5* (1), 32-47.

Martin, M. (2013). *Expertise in sustainable ICTs for the developing world: 12 Challenges facing computer education*. Kenya.

Ogunsola, L.A. (2005). Information communication technologies and the effects of globalization: Twenty-first century "digital slavery" for developing countries- Myth or Reality? *Electronic Journal of Academic and Special Librarianship 6* (1-2), 1-10.

Ojeme, A. (2013). *Excellence*. Retrieved from https://www.researchgate.net/publication/.

Okorie, N.C., Agabi, O.G. & Uche, C.M. (2005). Application of ICTs in the management of public and private universities. *Nigerian Journal of Educational Administration and Planning, 5* (2), 29-36.

Olakulehin, F.K. (2007). Information communication technologies in teachers training and professional development in Nigeria. *Turkish Journal of Distance Education TODJE 8* (1), 133- 142.

Oni, O., Haruna, Z. &Amugo, (2017). Information communication technology as pedagogy for teaching in some selected secondary schools in Edo State, Nigeria. *Asian Journal of Applied Science and Technology (AJAST) 1* (8), 85-99.

Osei, C.D., Larbi, E. & Osei-Boadu, Y. (2014). Multidimensional barriers to information and communication technology adoption among senior high school teachers in Ghana. *International Journal of Education and Research, 2* (2), 389-396.

Prozesky, D.R. (2000). Teaching and learning. *Community Eye Health, 13* (34), 30-31. Retrieved from https://www.ncbi.nlm.nih.gov/.

Rogers, E. M. (2003). *Diffusion of innovations*. (5th ed.) New York: Free Press.

Sequeira, A.H. (2012). *Introduction to concepts of teaching and learning*. Retrieved from https://www.researchgate.net/publication/.

Sudhir, M.A. (2015). Information and communication technology. In G.R. Angadi (Ed.). *Information and communication technology in education,* p.1-7. New Delhi: A.P.H. Publishing Corporation.

Tella, A. (2007). Impact of web-based e-learning atthe University of Botswana. *The African Symposium: An On-line Journal of African Educational Research Network, 7* (2), 87-97.

Tella, A., Adeyinka, A.A., Tella, A., Toyobo, O.M, & Adika, L.O. (2007). An assessment of secondary school teachers uses of ICT: Implications for further development of ICT use in Nigerian secondary schools. *The Turkish Online Journal of Education Technology, 6* (3).

UNESCO (2008). *ICT competency standards for teachers' implementation guidelines*,

version 1.0. Retrieved from http://www.unesco.org/en/competency-standards-teachers.

UNDP Evaluation Office. (2001). *Information communication technology for development*, No 5, pp 1- 31.

Victoria, E.O. (2013). *The challenges of using ICT in secondary schools*. London: Pitman Publishing.

Walubita, G. & Mulauzi, F. (2016). *In-service teachers' perceptions towards classroom technology integration in Zambia: A pilot study*. Proceedings of the 5th Teaching and Learning in Africa Conference, Livingstone, Avani Hotel, Zambia. 23rd to 27th May, 2016, pp. 260 – 274.

AJAMATES