

# INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY INTO TEACHER EDUCATION PROGRAMME DURING COVID-19 PANDEMIC ERA IN NIGERIA

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## ABSTRACT

*Teacher education in Nigeria today is highly recognized as the foundation of the nation's educational system, which contributes significantly to the development of other sectors in the nation's economy. The COVID – 19 pandemic outbreak in Nigeria in the last twelve months has adversely affected teacher education programmes in Nigeria leading to suspension of academic and research activities in the institutions as a result of nation-wide lock down for seven months. This study specifically focuses on how Nigeria aims at achieving a buoyant and efficient economy and accelerated transformation through the production of high quality and well-motivated teachers for all levels of education by integration of Information and Communication Technology (ICT), into teacher education programmes. The study examined the impact of COVID-19 Pandemic on teacher education programmes in Nigeria and justified the inevitable need for integrating ICT into teacher education programmes. It also identified the challenges of ICT utilization in teacher education programmes in Nigeria. It was recommended among others that the stakeholders must endeavour to provide the teacher education institutions with modern ICT tools and facilities for effective teaching, learning, conducting research and dissemination of information in the institutions, so as to achieve the lofty goals of teacher education in Nigeria.*

## INTRODUCTION

Teacher education is accorded high recognition in Nigeria, as the foundation of the nation's educational system, which contributes significantly to the development of other sectors in the nation's economy. As succinctly remarked by Afolabi and Loto (2014), teacher education constitutes the root of the educational system that supports and nourishes all other parts of the system. If this root is destroyed or not given prominent attention it deserves, the educational system in all its entirety will collapse and consequently development and growth in all the sectors of the economy will remain standstill. Also, Afolabi (2016) affirmed that teacher education equips the individual with relevant knowledge, skills and attitudinal orientation required to forge ahead in one's chosen career in life and contribute to the economic growth of the nation. It also helps in building, improving and integrating the nation's socio-cultural values that pave way to national development. The importance of teacher

education in Nigeria is further re-echoed in the National Policy on Education (2014). It is explicitly stated in Paragraph 70 of the document that, since no education system may rise above the quality of its teachers, teacher education shall continue to be given major emphasis in all educational planning and development.

The services of teachers to a nation are very crucial, for they are more than any professional group that influence the lives of the entire citizenship and the nation's future. The high quality teachers produced by various institutions running teacher education programmes in Nigeria would undoubtedly utilize their acquired knowledge, skills and attitudinal values to train and develop high level of manpower in various disciplines such as medicine and surgery, pharmacy, nursing, agriculture, science and technology, banking and finance, law, engineering, accountancy, architecture, marketing, insurance, business administration and other fields of study required for the socio-economic and technological emancipation of the nation. A nation that aims at achieving a buoyant and efficient economy and accelerated national development must improve the quality of her labour force through the efforts of highly motivated professional teachers, who are proficient in Information and Communication Technology utilization at all levels of education. Buttressing further the importance of teacher education in Nigeria, Adamu and Afolabi (2015) maintained that:

The pursuit of teacher education is highly essential for any nation that places high premium on the maintenance of its independence, sovereignty, political stability and economic buoyancy, as quality education constitutes the heartbeat of manpower development and training for socio-economic and technological emancipation of the nation and for prudent use and sustenance of resources in nation building.

In recent times in Nigeria, various education stakeholders have been placing high premium on the inevitable need for quality teacher education programmes. Adesina (2005) maintained that "the quality of education in any country is related to the quality of the man and woman who serve as teachers in the school system." Quality assurance in teacher education focuses specifically on the issues of relevance, effectiveness, efficiency, validity and functionalism. Ciwar (2005) affirmed that quality assurance in education has to do with setting standards for various processes and activities that lead to the production of graduates by the training institutions. The Third National Development Plan re-echoed that the quality of the teaching staff constitutes one of the significant determinants of educational standards at all levels in Nigeria. Also, Osarenren-Osaghae and Irabor (2018) declared that the training and production of the manpower required to fulfill the task of national development should be framed on the quality and quantity of teachers. Thus, quality assurance in teacher education entails that its contents are quite suitable, functional, valid, relevant, efficient and of high standards. The need for quality assurance in teacher education could be attributed to the inevitable need to produce self-reliant and nationally acceptable graduate teachers from various teacher education institutions that adhere strictly to the minimum standards of operation prescribed by the supervisory and regulatory agencies such as National Universities Commission (NUC), National Board for Technical Education (NBTE), National Commission for Colleges of Education (NCCE), and Quality Assurance Units or Departments of Federal and State Ministries of Education.

In spite of the stakeholders' commitment to quality assurance in teacher education programmes in Nigeria, it is, however, disheartening that teacher education has been susceptible to various challenges of COVID – 19 pandemic, that has been ravaging the country in the last twelve months. The COVID – 19 pandemic has not only threatened the quality of teacher education programme, but has also been a hindrance to effective implementation of the lofty goals of teacher education in the country. As man's socio-economic, moral and political advancement depends on

the teachers, who are potential liberators of people from ignorance, fear, misunderstanding, disease, conflicts, wars and famine, there is inevitable need to revisit the teacher education policy, towards ensuring proper integration of information and communication technology (ICT) into the teacher education programme. The quality of professional development of teachers depends greatly on the extent of ICT integration into teacher education programme. Teachers and students access knowledge and information through Internet, cable network, digital media, television and social media such as Twitter, Whatsapp, LinkedIn, facebook, Igo, Line, Wechat and so on.

Information and Communication Technology (ICT), according to UNESCO (2002), “is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters. Integration of ICT into teacher education entails the incorporation of computer based communication into daily classroom instructional processes. According to Baishakhi and Kammal (2016), ICT is very important for pre-service teacher education programme in the 21<sup>st</sup> century. Without proper knowledge of ICT, a teacher cannot perform in his or her classroom. Also, Ghavifekr and Rosdy (2015) affirmed that integration of ICT will assist teachers to the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities. Thus, ICT provides the complementary support for both teachers and students that involves effective learning with the assistance of the computers to serve the purpose of learning aids.

The use of ICT in the classrooms in the teacher education institutions in Nigeria signals a shift from the conventional position of power held by the teacher, to a more collaborative approach to learning, as computer based activities allow the teacher to assume the role of facilitator, while the students take on an increasing responsibility for their own learning. Bakare (2016) declared that teacher can use a range of teaching tools such as discussion boards, forum, e-mail, raps, web, videos and digital photography, e-movies and even mobile phones as tools for delivery of class programmes. It is quite apparent that the use of ICT in teacher education institutions will go a long way in overcoming the challenges of COVID – 19 pandemic on teaching, learning and conducting researches in the institutions and also paves way to the desired transformation in the country.

### **OBJECTIVES OF THE PAPER**

The specific objectives of this paper are:

- (a) To critically examine the impact of COVID – 19 pandemic on teacher education programmes in Nigeria.
- (b) To explore the rationale for integrating ICT into teacher education programme particularly during this COVID – 19 pandemic era in Nigeria.
- (c) To identify the challenges of ICT utilization in teacher education institutions.
- (d) To set up a model of integrating ICT into teacher education programme in Nigeria for quality assurance and overcoming COVID – 19 pandemic challenges particularly on teaching, learning and conducting research in the teacher education institutions.

### **VISITING THE TEACHER EDUCATION POLICY IN NIGERIA**

Teacher education can be defined simply as a specialized programme of study aimed at equipping prospective teachers with the knowledge, attitude and skills they require to perform their tasks

effectively in classroom and wider society. Before exploring the implementation of ICT in teacher education, it is deemed pertinent to have a cursory review of the concept of teacher education in Nigeria.

### **The Goals of Teacher Education in Nigeria**

As explicitly stated in the Sixth Edition of the National Policy on Education (FRN, 2014), the various institutions pursuing teacher education in Nigeria must focus on accomplishing the following goals of teacher education in Nigeria.

- (a) To produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational systems;
- (b) To encourage further the spirit of enquiry and creativity in teachers;
- (c) To help teachers to fit into social life of the community and the society at large and enhance their commitment to national goals;
- (d) To provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations;
- (e) To enhance teachers commitment to the teaching profession.

### **Activities Specified towards Achieving The Lofty Goals of Teacher Education In Nigeria.**

The various institutions running teacher education programmes in Nigeria should aim at achieving the goals of teacher education through effective performance of the following functions as specified in the National Policy on Education (2014):

- (a) Teaching;
- (b) Research and development;
- (c) Virile staff development programmes;
- (d) Generation and dissemination of knowledge;
- (e) A variety of modes of programmes including full-time, part-time, block release, day-release, sandwich and so on.
- (f) Access training funds such as those provided by the Industrial Training Fund (ITF);
- (g) Students Industrial Work Experience Scheme (SIWES);
- (h) Maintenance of Minimum Educational Standards through appropriate agencies;
- (i) Inter-institutional cooperation
- (j) Dedicated service to the community through extra-mural and extension services.

It is no gainsaying that the lofty goals of the teacher education in Nigeria would be effectively accomplished if ICT is fully integrated and properly administered in the teacher education institutions. ICT has paved way for better and quicker communication, effective presentation of learning materials to students, and unbiased assessment of students' learning outcomes. ICT serves as an effective tool for information acquiring as students are encouraged to look for information from

multiple sources, thereby making them more informed than before. Thus, ICT is an indispensable tool for achieving the lofty goals of teacher education, particularly in the era of COVID – 19 pandemic in Nigeria.

ICT utilization entails the appropriate use of various ICT tools in facilitating teaching and learning in teacher education institutions. As new trends are emerging in teacher education pedagogy such as Inter-disciplinary Approach, Correspondence courses, Simulated Teaching, Micro-Teaching, Programmed Instruction, Team Teaching and so on, the use of ICT tools will assist greatly in presenting learning materials to students at various locations, thus making teaching and learning easy, highly motivating, interesting, captivating and retentive.

### **THE IMPACT OF COVID – 19 PANDEMIC ON TEACHER EDUCATION IN NIGERIA**

Nigeria is one of the countries affected by the outbreak of the deadly viral communicable disease called Coronavirus disease 2019 (COVID – 19), previously known as 2019 – novel coronavirus (2019 – nCoV). Towards the last quarter of the year 2019, COVID – 19 pandemic was reported from Wuhan, the capital and major business city of Hubei province, China. Within a very short time, the deadly disease spread across the globe with an exponential increase in morbidity and mortality rates. On 11th March, 2020, the World Health Organisation (WHO) declared COVID – 19 a pandemic having met the epidemiological criteria of having infected over 100,000 people in over 100 countries. The first COVID – 19 pandemic case in Nigeria was confirmed in Lagos State on 27th February 2020, from a 44 year old man, an Italian citizen, who returned from Milan, Italy, on 24th February (NCDC 2020).

Since 27th February, 2020, Nigeria has continued to experience an increase in the number of COVID – 19 pandemic cases, which have spread across the 36 States and the Federal Capital Territory (FCT). While majority of the initial cases were imported, most of the new cases have no travel history and are attributed to community transmission. Symptoms exhibited by COVID – 19 pandemic according to Shrikrushina et al (2020), include sneezing, running nose, cough, watery diarrhea, and fever in rare cases, sore throat and exacerbated asthma. To minimize the spread the COVID – 19 pandemic in Nigeria, the Federal Government of Nigeria Centre for Disease Control declared total lockdown in April, 2020, which led to closure of all educational institutions, commercial and event centres and churches and mosques. The lock down policy of the Federal Government has far reaching impact on Teacher Education programmes in Nigeria. These include:

- (a) Suspension of all academic activities in the institutions.
- (b) Research activities were put into a halt due to inaccessibility of researchers to research facilities and equipment
- (c) Suspension of practical-based programmes such as teaching practice, laboratory-based activities and so on.
- (d) Keeping teachers and students at home, engaging only in domestic activities and playing in door games.
- (e) Prevention of physical interaction by placing high premium on social distancing and healthy living.
- (f) Putting all learning environments in the institutions such as lecture theatres, lecture rooms, technical workshops, studios, science laboratories and so on under total lock.

- (g) Keeping students away from using the recreation ground for sporting activities.

## **RATIONALE FOR INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY INTO TEACHER EDUCATION PROGRAMMES IN NIGERIA**

The emergence and advancement of Information and Communication Technologies (ICTs) have greatly modified the culture of teaching and learning in various educational institutions across the globe. As succinctly remarked by Abidoye (2018), “Advances in ICT have really revolutionized the way we teach and how we learn in many ways; for instance, increasing access to post-secondary institution, improving the availability of educational resources and facilitating meaningful interaction among learners”. The use of Information and Communication Technologies (ICTs) applications enhances an exchange of information between the teachers and learners through the use of various forms of ICT tools such as computers, mobile phones, audio devices, video, radio and television broadcasts and other communication based technology tools. According to Loveless (2011), a positive experience of ICTs in the classroom helps developing students’ self-confidence and confidence in working as individuals and with others, and contributes to the broad quality of their learning.

Current innovations and development in ICTs have increased the level of interactivity and collaborations among teachers and learners. For instance, the web-based learning which is a form of learning largely supported by an Internet browser has greatly helped in resolving the multifarious problems caused by distance between teachers and learners. Web-based learning can be used in imparting knowledge through web-based conferencing, chats, electronic mails, web pages and web board for sharing vital information. Thus, it is therefore deemed pertinent to integrate Information and Communication Technology into teacher education programmes because of the following reasons.

1. In this world of pragmatic and competitive science and technology, teachers in Nigeria should be properly trained in the area of basic Information and Communication Technology with special focus on its application in the classroom to enhance pedagogy.
2. Teacher education constitutes the foundation of the entire educational system. It is highly imperative to produce high quality teachers who would utilize their required knowledge, skills and attitudinal values to train and develop high quality manpower required for the socio-economical and technological emancipation of Nigeria. This requires proper integration of ICT into teacher education programmes.
3. For teachers to serve as potential liberators of Nigerian from conservatism, fear, misunderstanding, diseases, conflicts and famine, they should jettison the traditional methods of instruction and embrace modern instructional strategies which demands the use of ICT tools and facilities. Hence, there is a need to integrate ICT into teacher education programmes.
4. COVID – 19 pandemic caused the closure of educational institution for seven months in 2020 in Nigeria thereby paralyzing academic activities in the institutions. These difficulties could be overcome through proper integration of ICT into teacher education programmes. Students in various locations could be taught effectively through the use of ICT facilities and tools.

5. In order to effectively accomplish the lofty goals of teacher education in Nigeria of producing well committed teachers with high personal and professional discipline, integrity, commendable deamenour and competence for all levels of education in Nigeria, there is a need to integrate ICT into teacher education programmes to assist teachers to the global requirement of using technology based teaching and learning tools and facilities.
6. As teacher education serves as a formidable tool for political stability, economic buoyancy, cultural integration and social reconstruction in Nigeria, ICT should be properly integrated into teacher education programmes to ensure that good standards are set for various processes and activities that lead to production of high quality teachers for all levels of education in Nigeria.

### **THE CHALLENGES OF ICT UTILISATION IN TEACHER EDUCATION INSTITUTIONS IN NIGERIA**

**1. The challenge of dwindling allocation of funding to teacher education institutions.**

Adequate financial input is crucial to the success of any system of education. The provision of ICT facilities, tools and equipment and procurement of software and other needs is dependent upon availability of funds. Financial allocation to teacher education institutions in Nigeria has been showing a downward trend over the years (Aworanti, 2016).

**2. Astronomical increase in the cost of ICT facilities, tools and equipment.**

Economic recession in Nigeria coupled with Naira devaluation have inevitably led to increase in the cost of ICT facilities, tools and equipment, particularly the hardware, like desktop and laptop computers, computer printers, overhead projects, and monitors.

**3. Prohibitive cost of establishing well equipped computer laboratories and management information centres in the institutions.**

It has been an onerous and herculean task for the stakeholders of teacher education to provide modern and well equipped computer laboratories and management information centres in the teacher education institutions. Even most of the institutions lack automated e-libraries stocked with modern gadgets.

**4. Irregular electricity supply in the institutions.**

The use of ICT for teaching, learning, research and proper dissemination of information requires proper supply of electricity. Ironically, the institutions have been witnessing epileptic power supply over the years.

**5. High cost of Internet data and electronic services on server connection.**

There has been unprecedented increase in the cost of Internet data and electronic services on server connection beyond what most of the institutions could afford due to paucity of fund in the institutions.

**6. Low level of computer literacy among the lecturers.**

The use of ICT in teacher education institutions will continue to be an uphill task, if the lecturers are recalcitrant to undergo professional training in computer utilization

in teaching, learning, research, students' assessment, results computation and prompt dissemination of vital information on academic matters.

**7. Lecturers' apathy to adopt technology-based instructional strategies.**

In spite of the various benefits to be accrued in ICT utilization in teacher education institutions, it is very disheartening that some lecturers hitherto show preference to traditional methods of teaching.

**8. Student location and security challenges.**

ICT utilization in teaching and learning may be difficult to accomplish, where students could not be well connected due to poor signals from the Internet Servers, as a result of their remote residential areas. Also, students carrying their laptops or Android phones to places where they could receive proper signals are often embarrassed by Nigerian Police as mischievous students who want to make money through Internet fraudulent practices with their laptop computers.

**9. Inadequate personnel for ICT training.**

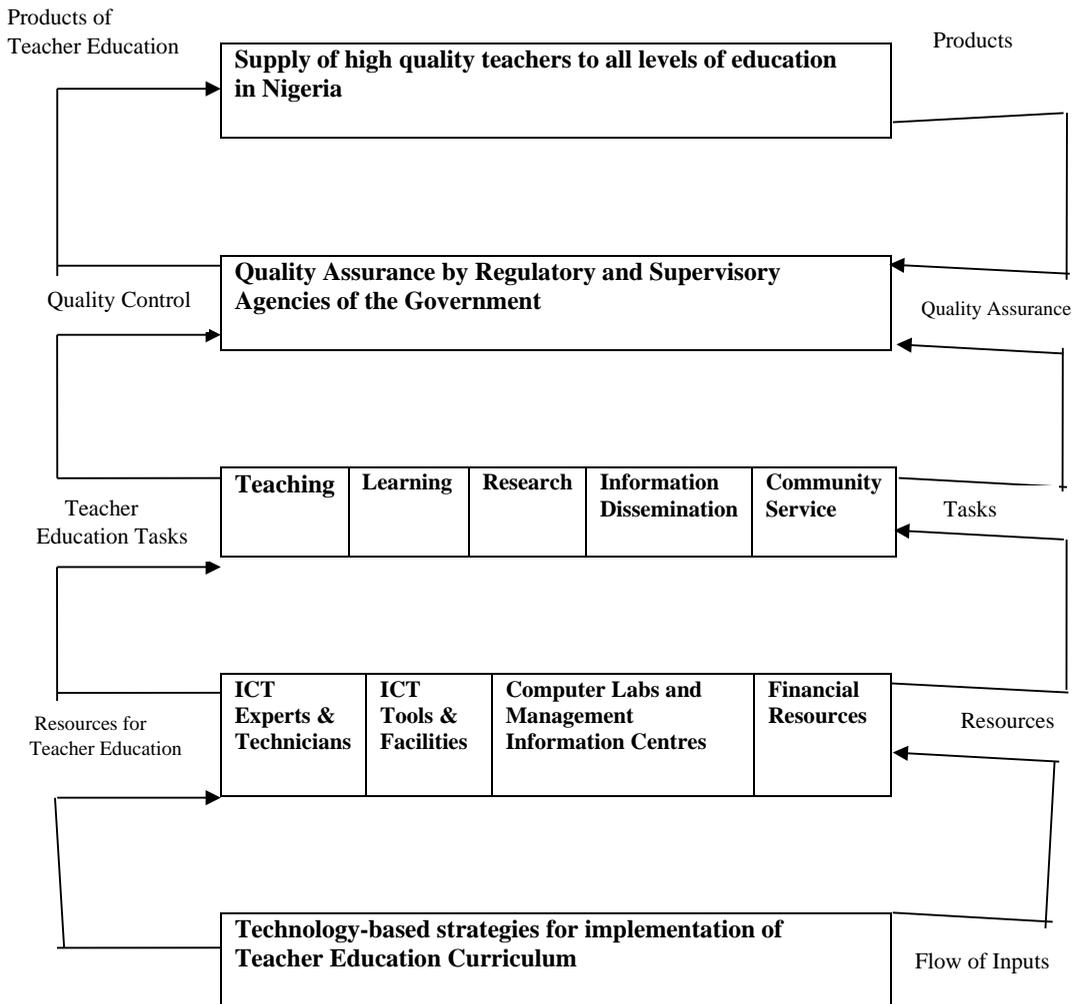
As many teachers are now clamoring for ICT utilization in teaching, learning, research and dissemination of information, experts in ICT to train the teachers are grossly inadequate. ICT has many components that require various experts to handle effective service delivery.

**10. Maintenance of ICT facilities, tools and equipment:** To prevent quick depreciation of ICT facilities, tools and equipment, they must be subjected to regular maintenance and prompt replacement of the faulty ones. Lack of maintenance of their facilities is a serious challenge to ICT utilization in teacher education institutions.

### **A MODEL ON INTEGRATING ICT INTO TEACHER EDUCATION PROGRAMMES FOR QUALITY ASSURANCE**

The model of integrating ICT into teacher education programmes for quality assurance is depicted in Figure 1. The following procedural steps are vividly indicated in the model.

- (a) Enriching the implementation of curriculum of teacher education with technology-based strategies.
- (b) Procurement of high quality and adequate quantity of human, physical, material and fiscal resources required for effective implementation of teacher education programmes in the Nigerian teacher education institutions.
- (c) The ICT tools, facilities and equipment must be prudently utilized and well monitored by the appropriate regulatory and supervisory agencies in Nigeria, for quality assurance.
- (d) Incorporating ICT into teaching, learning, research and dissemination of information on vital academic matters.
- (e) Production of high quality teachers for all levels of education in Nigeria.



**Figure 1: A Model of Integrating ICT into Teacher Education Programmes for Quality Assurance**

*Source: Akinola, E. T., Afolabi F. O., Afolabi, O. A and Dike, I. D. (2020). Field Work*

### CONCLUSION

Proper integration of ICT into teacher education programme for quality assurance particularly during COVID – 19 Pandemic era in Nigeria, requires robust funding. It therefore behoves all stakeholders of teacher education in the country to provide all the necessary infrastructural support and adequate fund for teaching, learning, research and dissemination of information in the teacher education institutions. The high quality manpower developed through teacher education would utilize their acquired knowledge, skills and attitudinal values to attain and

sustain economic efficiency, cultural change, social reconstruction and scientific and technological advancement of the nation. However, the training received and skills acquired by these teachers while in the institutions would be a monumental waste if they are not maximally utilized in the service of the nation through gainful employment.

### RECOMMENDATIONS

ICT should be properly integrated into teacher education programmes in Nigeria. Every teacher education institution should be mandated to have functional and well equipped computer laboratories, management information centres, and automated e-library stocked with modern learning gadgets. The ICT tools and facilities must be properly powered through uninterrupted electric power supply and well maintained.

ICT utilization in teacher education programmes needs robust funding. Thus, funding of teacher education programmes should be a joint responsibility of the Government, communities, business organizations, non-governmental organisations and the households. It is imperative for the teacher education institutions to persistently appraise their sources of Internally Generated Revenue (IGR) with a view to securing them.

The cost of ICT tools, equipment and facilities is increasing daily in Nigeria due to Naira devaluation. As teachers and students are in dire need of the ICT tools particularly laptop computers and Android cellular phones for teaching, learning, research and dissemination of information, the Federal Government could passionately remove import duties on these ICT tools and facilities.

Regular workshops and in-service training should be mounted periodically for staff in the teachers education institutions on how to effectively utilize ICT in teaching, learning, students' assessment, results computation, web based conferencing, open and distance learning, teleconferencing and dissemination of information on vital academic matters.

The supervisory and regulatory bodies such as NUC, NBTE, NCCE and TRCN must be adequately funded and empowered by the Federal Government and national legislature for effective service delivery.

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