

THE EXTENT INFORMATION AND
COMMUNICATION TECHNOLOGY
ASSISTED IN ENABLING STUDENTS
TEACHING AND LEARNING DURING
CORONAVIRUS PANDEMIC IN SECONDARY
SCHOOLS IN AWKA SOUTH LOCAL
GOVERNMENT AREA OF ANAMBRA STATE.

Juliana Nkechi Odoh (Ph.D)

Educational Management and Policy, Faculty of Education

Nnamdi Azikiwe University Awka, Anambra State.

Email nj.odoh@unizik.edu.ng, jullyodoh@gmail.com

ABSTRACT

This study was done on the extent of information and communication technology during coronavirus pandemic in secondary school in Awka South local Government Area of Anambra state. Objective of the study is to determine the extent information communication technology assisted in enabling student teaching and learning during coronavirus pandemic in secondary schools in Awka South Local Government Area of Anambra State. One research question guided the study. Descriptive survey research design was used for the study. The population of the study comprised of 495 teachers in the 19 public secondary schools in Awka South L.G.A. of Anambra State. Multi-stage sampling technique was used to select 10 public secondary schools, out of the 19 public secondary schools in Awka south, while 25 teachers were randomly selected from each of the 10 schools to give rise to the sample of 250 teachers. The researcher designed a questionnaire related to the subject matter. Data collected in the study were analyzed using mean, the scores were presented in tables showing relative frequencies of each item or group of items. Findings of the study are grouped into, positive and negative aspect. On the positive aspect, students were able to learn online during the Coronavirus Lockdown, students were able to get ICT knowledge and skills in their various schools prior to the Coronavirus Pandemic Lockdown, students were able to carry out some research on their own concerning the non-familiar terms used by their teachers in the course of teaching, students were able to provide answers to the assignment given to them and explore more online. While on the negative aspect, the results showed that students usually missed online classes since data was expensive, they encountered the issue of poor power supply while learning online, network always affect classes in session, because they do not have enough computer facilities, learning wasn't that easy, some teachers do not know how to teach using online mechanism, some teachers preferred classroom teaching to online teaching.

Keywords: Information, Communication, Technology, Secondary School and Coronavirus

Introduction

According to Obi&Obiakor (2021) ICT is an acronym for Information and Communication Technology. ICT is an extensional term for Information Technology (IT) that stresses the role of unified communications and the integration of telecommunication and computers, as well as necessary enterprise software, middleware, storage and audiovisual, that enables users to access, store, transmit, understand and manipulate information. ICT is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computers and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as Videoconferencing and distance learning (Ofojebe and Obiakor, 2022). Information and Communication Technology refers to technology that provides access to information through telecommunication (Okechukwu et al 2021). It is similar to Information Technology (IT) but focuses primarily on communication technologies. This includes the internet, wireless networks, cell phones and other communication mediums. It means we have more opportunities to use ICT in teacher training programs nowadays and improve quality of teacher for effective teaching and learning. According to United Nations Education, Scientific and Cultural Organization (UNESCO, 2020) "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters". ICTs are making dynamic changes in the society.

They are influencing all aspects of life. The influences are felt more and more at schools, because ICTs provide both students and teachers with more opportunities in adapting teaching and learning to individual needs, society is, forcing schools aptly respond to the technical innovation. The term ICT is also used to refer to the combining of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management (Odim, Annastashia& Solomon, 2018). However, “the concepts, methods and applications involved in ICT are constantly evolving on the daily basis”. The broadness of ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form e.g. personal computers, digital television, email and even the modern day robots (Odim et al, 2018). ICTs are often spoken in a particular context, such as ICTs in education, health care, or libraries (Okechukwuet al 2021). Moreover, He explained ICT as applying to software, and not only hardware’s seems to be the case in the other definitions. This difference isn’t so obvious as one can argue that, in order for the equipment mentioned in the other definitions to serve their purpose, software (as an engine) is needed to run them. ICT is the study, design, development, application, implementation, support or the management of computer-based information systems. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones (Aniekwe. 2017).

Coronavirus Pandemic

Coronavirus disease 2019 (COVID 19), was first identified in Wuhan China in December, 2019 and has rapidly spread to almost every region of the world. The disease is caused by a new and severe type of coronavirus known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2). The infection has no immediate treatment and vaccine, and it has according to World Health Organization (WHO, 2010) became a Worldwide pandemic causing significant morbidity and mortality. There are 1,603,428 confirmed cases, 356,440 recoveries from the illness and 95,714 deaths worldwide as of April 9, 2020 (World meters, 2020). On the February 27, 2020, an Italian citizen became the index case from COVID -19 in Nigeria and as of April 9, 2020, there were 288 laboratory confirmed cases of COVID-19 in Nigeria with 51 discharges and 7 deaths (Nigeria Centre for Disease Control, NCDC, 2020). To prevent further spread of the virus, civil societies and government agencies embarked on enlighten campaign from good hygiene and social distancing, Temperature screening was conducted at airport and those returning from countries with numerous confirmed cases of COVID -19 were implored to self-isolation. The NCDC in association with state government also began trace tracking of possible victims and their contacts. On March 18, 2020 introduced various containment strategies such as closing of the national boarder and airspace, schools, worship centers and other public places, concealing of mass gathering events and placing the Federal Capital Territory, Lagos and Ogun states on lock down for an initial period of fourteen days (Radio Nigeria, 2020). COVID-19 testing laboratories were set up in Lagos, Abuja and Irrua Edo State while State governments opened isolation centers and imposed dawn to dusk curfews in their territories.

The contagion could lead to severe respiratory problems or death, particularly among the elderly and persons with underlying chronic illnesses. Some infected person however are

carriers for the virus with no symptoms while others may experience only a mild illness and recovery easily (Obiakor and Nwakpa, 2022).

In line with this therefore, the Nigeria Governments introduced various containment strategies which have interfered with individual' daily lives and have led to severe economic loss and social disruption. People were coerced to stay at home, businesses and offices were closed, exempting health care facilities/workers and essential commercial establishment. For Nigeria making a living in the informal economy, their livelihood is now threatened by the lockdown since much of their activities and businesses involve face-to-face contact. Even most religious leaders agree to stop large gathering, forbid the shaking of hands and directed church members to pray at home and use hand sanitizers (Obiakor and Nwakpa, 2022). On the other hand, some Nigerians due to superstitious and ignorance of the science behind the infection prefer only to pray (even violating the social distancing role by attending churches or mosque during the lockdown) and uses anointing oils, talisman, herbs or rituals to prevent contacting and spreading the virus (Obi & Obiakor, 2010). Some also use social media platforms (e.g. Telegram, Reddit, whatsapp, twitter, facebook) to spread fear, project fake news concerning the sources of the virus, promote prejudice against China, insight panic buying, proffer fake cures and undermine medical advice, deliberately or ignorantly (Hassan, 2020). They opined that lockdown, self isolation and social distancing are un-african solutions to the pandemic (Obiakor& Nwakpa 2022). The coronavirus pandemic (COVID- 19) has no doubt adversely affected the global economy. It has forced many businesses to temporarily shot down and government across the world to place some restrictions on movement while exempting providers of essential services who are to strictly to observe social distancing rules while providing services as a way to contain the spread of the virus.

Unfortunately, the educational sector is a part of the receiving end. According to (UNESCO, 2020), an estimated 1. 725billion learners have been affected as a result of school closure, representing about 99.9% of the world's student's population as of April 13, 2020.

Furthermore, the continuous advances in information technology have enabled the realization of a more distributed structure of knowledge transfer through the development of e-learning. The developing countries have embraced ICT and consequently E-learning so as to keep pace with unimaginable speed in the area of technology. The use of ICTs in Nigeria and African countries generally is increasing and dramatically growing. Since E-learning systems allow student to take courses at their own time and pace, it is more convenient than their in-person counterpart. The flexibility of E-Learning stating that students can even refer back to previous lectures without affecting the learning pace of other student.

Overview of ICT in Nigerian Educational System

There is development in the Nigerian education sector which indicates some level of ICT application in the Nigerian schools. The Federal Government of Nigeria, in the National Policy of Education (Federal Republic of Nigeria, 2010), recognizes the prominent role of ICTs in the modern world, and has integrated ICTs into education in Nigeria. To actualize the goal, the document stated that government will provide basic infrastructure and training at the primary school. At the basic school, computer education has been made a prevocational elective, and is a vocational infrastructure and the training for the integration of ICTs in the school.

The Federal Ministry of Education has launched an ICT driving project known as school net (Federal Republic of Nigeria, 2010), which was intended to equip all schools in Nigeria with

computers and communication technologies. The Nigerian Federal Government has commissioned a mobile internet unit (MIU) operated by the Nigeria National Information Technology, Development Agency (NITDA, 2016). The MIU is a locally made bus that has been converted into a mobile training and cyber centre. Its interior has ten working station, all networked are connected to internet. The MIU is also equipped with printers, photocopiers, and a number of multimedia facilities. Internet is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to enhance regular power supply. The MIU texts the internet to places, areas and various primary and high schools. The number of buses is so small; however the most rural areas and schools have not yet been covered.

Although efforts have been made to ensure that ICTs are available and used in Nigerian schools, the level of uptake is still low, (Okechukwu, et al 2021) discovered that the unavailability of some ICT components in school's hampers' teachers use of ICTs. Lack of adequate search, skills and of access points in the schools were reported as factors in habiting the use of the internet by schools teacher. The absence of ICT equipment in most Nigerian schools leads students to resort to cyber café for internet access. Most cyber café clients in Nigeria are students. The ICT revolution is yet to attain the critical mass required for it to register the necessary impact in teaching students civilian population nationwide (Damkore et al, 2015). While some schools could be said to be in vanguard, the majority of Nigerians universities, Polytechniques, Nursing and Midwifery schools and colleges of Education lack computers. Many of the lecturers in this public institutions have to go to commercial cyber café before they can have access to a computer. The private universities are better off since the majority of them, for example the ABTI-American University of Nigeria (AAUN) has 24hours internet connectivity on campus, and each students is provided with a laptop with the cost factored into the fees structure. The AAUN fee is beyond the means of most Nigerians. The activities of NITDA, ETF, school net Nigeria, and other stakeholders, as well as the partnership with CHISCO and Microsoft, should gradually move the Nation towards the realization of its ICT vision as network operators and software developers take advantage of the opportunities offered to acquire essential expertise and technology in their area of endeavors to help initiate generalized internet usage. It is then that E-Learning and ICT application to education in general may come of age in Nigerian schools.

The mode of delivery of knowledge and curriculum are not yet ICT enhanced, thou with the development of National Policy on ICT in Education, Nigeria is predictable a step in the right direction towards improvement for the sector (Ofojebe &/ Obiakor 2022) factors militating against its full implementation are insufficient number of computers, epileptic power supply, problems of internet network failure, lack of ICT knowledge/skills, difficulty in integrating ICT to instruction, scheduling computer time, insufficient peripheral devices, inadequate software, insufficient teaching time, adequate access, lack of qualified ICT personnel, cost of equipment and management attitude. (Okechukwu et al, 2021) indicated that the unavailability of some ICT components in schools' hampers teachers use of it. The various challenges that have been raised have to be addressed, in order for Nigeria to make effective use of ICT to enhance her education.

(Obiakor & Obi 2021) suggested that, 'ICT is still in the emerging phase in Nigerian Educational system'. In their article entitled, ICT in education: achievement so far in Nigeria, which discusses ICT dimension, its transforming power, status in Nigerian educational institutions, plus limitations to its infusion, both experts say the country is yet to progress beyond the emerging phase of ICT in education which according to them is only one of four

approaches, the goal of ICT in education embrace. This approaches: emerging, applying, infusion, and transforming. (Iloanusi&Osugwu, 2019) said 90% of Nigerians educational institution fall within emerging phase, 7% in the applying phase and 3% in the infusion and transforming phase, with a few other sectors of the economy having and Higher Institutions by governments, NGOs banks and several private sector groups. The MTN Virtual Library project embarked upon in key universities in Nigeria for instance, has enhanced research opportunities; the NUC facilities of the progressed beyond this phase, in addition, (Aduwa – Ogiebean&Iyamu, 2015) noted that many developing countries, especially in Africa are still low in ICT application and use. Thus, it is believed that in order to emerge beyond the first stage in the last three which are termed the “functional approaches”, a lot of policy implementation and funding is required. Special interventions have been made to secondary setting up of Network cables, connectivity devices in Federal Universities with free consultancy service to universities and inter universities centre on ICT; plus the Nigerian Communication Commission (NCC) and Education Trust Fund (ETF) geared towards Universities and Polytechniques has enhanced learning in several ways (Iloanusi&Osugwu, 2019).

Benefits/Advantages of Information Technology on student learning

According to Ofojebe & Obiakor (2022) the full utilization and integration of ICT in Nigerian secondary schools has benefited ICT inclined schools in the following aspect:

Improving the quality of teaching and learning

Three strategies characteristics have to be available in order to develop a qualitative learning environment with ICT: this is liberty, ability, and vision. Liberty means that students are free to think, feel or do just as they are pleased on how best to use ICT in their learning. This enables them to become more productive at their own speed and in group of other student. Ability of student on the other hand means the quality that permits; facilitate achievement and accomplishment of set objectives. The student’s ability in using ICT infrastructure and computers in learning is a very strong factor that determines to what extent the students can acquire skills that develop them. Vision being the third characteristics ought to have in other to attain the needed proficiency in the use of ICT in their studies is the ability to see and imagine themselves succeeding in their studies. The above qualities prove to be of immense influences in the teaching and learning of ICT in public Secondary Schools (Okechukwu et al, 2021).

Provides a support for Student-Centered and Self-Directed Learning

When the use of computers was first introduced into the Nigeria educational systems, the general assumption was that computers would by itself teach students (Mevarech& Light, 2012) today, many students have learnt a lot about their fields of study by making a very good use of ICT in their studies. When engaged into meaningful application by students, computers tend to increase the productivity of students (Olokoba, Abudullahi&Omosidi, 2014). They constitute new knowledge that students gain by accessing and utilizing information that are related to their fields of study. As a result of learning through ICT, students are better equipped to perform very good in their studies by critically using the knowledge obtainable from the information and Communication Technology (ICT) (Abur&Torruam, 2013).

Assist Students in accessing and retrieving information digitally with utmost efficiency

ICTs can alleviate research in any given discipline as they tend to provide faster and easier entry to a broader range of information via digital libraries that offer many qualities digitalized educational resources to students (Yusuf & Onasanya, 2014). This is one of the major uses of ICT to which students can apply the knowledge of ICT in their studies, for example, students can browse the internet with the aid of the computer and other IT technologies to find the answer to their take home works from school. According to Okechukwu et al (2021). ICT serves as an effective tool that aid students to learn new topics, solve the problems arising their studies and provide solutions to the problems in the subject of learning ICT, makes the process of acquiring skill or knowledge readily accessible, when students are actively engaged in the practical application of ICT.

Helps to equip the teachers for an effective teaching and learning process

The proper application of ICT resources made Secondary School teachers to be informed and be able to offer reliable and authentic information needed by their students. It can effectively be used to ultimately select only the required information from varying sources purposely to compare the contrast ideas. It aids students to perceive and retain information or knowledge (Damkore, 2018). This also empowers the teachers to overcome the problem of incompetence that usually brings the move for a smooth integration of ICT into secondary School education to its knees. For National Policy on Education (NPE, 2014), the following were credited to adoption of ICT

Creative and Innovative Teaching and Learning: -With E-Learning, teaching and learning of curriculum content could be more creative and innovative in preparation for the 21st century global knowledge society (Anekwe, 2017).

E-Learning Achieve Better Value: - Education leaders, evaluators and including classroom lecturers and teacher could develop innovative ways of deploying their resources, exploiting e-learning alongside with other teaching methods to improve quality and economic scale (Anekwe, 2017).

F-

Empowers Learners: -As stated by National Policy on Education (NPE, 2014) one of the primary aim of the philosophy of Nigeria is to produce a self-reliant citizen that can be useful to themselves, their society and to the development of the country at large. E-learning engage learners with more active learning process, people in group or individual irrespective of their age could take responsibility for what and how they learn, achieving their personal goals as self-directed lifelong learners.

E-Learning Offer Flexibility: - A more responsive education system would adapt to the needs of all learners, whenever and however they need to learn. Wide range curriculum content deployment to learners that will make the philosophical framework of Nigeria education to be ascertained on the level of equity. NPE (2014) recognize equal education for all citizen and with E-Learning, the goal can be achieved.

Objective of the study.

The main objective of the study is to determine the extent information communication technology has assisted in enabling student teaching and learning during coronavirus pandemic in secondary schools in Awka South Local Government Area of Anambra State.

Research Question;To what extent has (ICT) information and communication technology assisted in enabling student teaching and learning during coronavirus pandemic in secondary schools in Awka South Local Government Area of Anambra State?

METHOD

Research Design. The design of the study was descriptive survey design, according to Nwaorgu (2015), descriptive survey design is employed in a study to collect data based on the opinions of the representative sample of the population or sometimes from the entire population. Therefore, descriptive survey design is appropriate for the study; The Extent of Information and Communication Technology assisted on student learning during Coronavirus Pandemic in Secondary Schools in Awka South Local Government Area of Anambra State as opinions of the subjects would be sought. The study was carried out in Awka South Local Government of Anambra State. Awka is the capital of Anambra State. It has 9 villages that made up the Awka South local Government, Area which includes; Awka, Amawbia, Nibo, Okpuno, Nise, Ezinato, Isiagu, Mbaukwu, Umuawulu. The population of the study comprised all 495 teachers in the 19 public secondary schools in Awka South L.G.A. of Anambra State (Source: PCR Department in PPSSC headquarters Anambra State) as of 18th of November, 2022. The sample for the study comprises 250 teachers in Awka south local government area. The sampling technique employed was multi-stage sampling. Out of the 19 public secondary schools in Awka south, 10 schools were randomly sampled, while 25 teachers were randomly selected from each of the 10 schools to give rise to the sample of 250 teachers. The instrument used for data collection is a well-structured questionnaire of 4 points scale questionnaire designed by the researcher. The questionnaire was used to collect data from respondents in relation to the objectives of this study. The questionnaire was divided into two sections namely; A and B, while A comprises of personal details of the respondents such as age, gender and level of Academics, section B comprises questions relating to the questionnaire. The instrument was trial-tested using the response of the 15 teachers of Secondary Schools in Awka North Local Government Area. The Cronbach alpha statistics was used to ascertain the internal consistency of the developed Instrument. Reliability coefficient values of 0.86 and 0.85 were obtained A and B respectively while grand reliability index coefficient was 0.82 was obtained. These results indicated that the instrument was quite reliable. The researcher employed direct delivery and retrieval method in the administration of the instrument to the respondents. A total of 250 copies of the questionnaire were distributed to the respondents by hand with the help of two research trained assistants. The researcher employed the services of the research assistant to collect the completed questionnaire from the respondents on the spot to ensure a high return rate. Data collected in the study were analyzed using mean; the raw scores were presented in tables showing relative frequencies of each item or group of items. Four –point scaling of strongly Agree (SA) 4, Agree (A) 3 and Disagree (D) 2, strongly Disagree (SD) 1, were used for the study.

A cut –off mark of 2.50 which is the mean of the weights given to the response options will be used for determining the extent of agreement to each items.

The decision role was that any item with mean score of 2.50 and above would be taken as having attracted positive response, while any item with mean score below 2.50 would be taken to have attracted negative response.

Results:

Research Question:To what extent has Information and Communication Technology assisted in enabling student learning during Coronavirus Pandemic in Secondary Schools in Awka South Local Government Area of Anambra State.

Table:The extent Information and Communication Technology assisted in enabling student learning during Coronavirus Pandemic in Secondary Schools in Awka South Local Government Area of Anambra State.

Items	SA	A	D	SD	Score	Mean	Remark
The extent Information and Communication Technology assisted in enabling students learning during Coronavirus pandemic in secondary schools in Awka South Local Government Area of Anambra State					Total	X	
					250		
1. They were able to learn online during Coronavirus Pandemic Lockdown	115	54	45	36	748	3.0	Agree
2. They have been able to get ICT knowledge and skill in their various schools prior to the Coronavirus Pandemic Lockdown	135	84	20	11	843	3.4	Agree
3. They carry out some research on non-familiar terms used by their teachers in the course of teaching	133	73	35	9	830	3.3	Agree
4. They were able to conclude the terms scheme during the Coronavirus Lockdown	160	45	45	0	865	3.5	Agree
5. They could do assignments on their own and learn more online	100	85	65	0	785	3.1	Agree
6. They could easily record teaching so that they might replay in their free time	25	50	45	130	470	1.9	Disagree

From the table above, the extent Information and Communication Technology assisted in enabling student learning during Coronavirus Pandemic in secondary schools in Awka South Local Government Area of Anambra State showed that items 1,2,3,4 and 5 with the various mean value of 3.0, 3.4, 3.3, 3.5, 3.1, were above 2,5 respectively which indicated agree, while item 6 with mean value of 1.9 was lower than 2.5 which indicated disagree.

Discussion of the findings:

To what extent has Information and Communication Technology assisted in enabling students learning during Coronavirus Pandemic in Secondary Schools in Awka South Local Government of Anambra State?

The findings of the study to a high extent positively showed that they were able to learn online during Coronavirus Pandemic Lockdown, they have been able to get ICT knowledge and skill in their various schools prior to the Coronavirus Pandemic Lockdown, they carry out some research on non-familiar terms used by their teachers in the course of teaching, they were able to conclude the terms scheme during the Coronavirus Lockdown, they could do assignments on their own and learn more online. And negatively could not easily record teaching, so that they might replay in their free time in Awka South Local Government Area of Anambra State.

Conclusion

The findings of this research indicated that Information and Communication Technology contributed positively high towards students learning during Coronavirus Pandemic in secondary schools in Awka South Local Government Area of Anambra State. The study showed that constant use of social media by secondary school's students often interfered with their learning and thus, reduced their active participation in classes online.

Recommendations

Based on the findings of the study, it was recommended that:

1. The Federal Government of Nigeria has a major role to play in providing modern ICT equipment's in schools for easy internet access.
2. There should be adequate service training of teachers in secondary schools.
3. Parents should endeavor to get a computer system for their children to aid the learning process and to enable them get acquainted with the use of ICT.

Reference

- Aduwa-Ogiegbean, S.E. & E.O.S. (2018). Using Information and Communication Technology in Nigeria Federal and State University. *European Journal of Research and Reflection in Educational Sciences*, 5 (3), 21-37.
- Damkor M., Irinyang D.J. Haruna M. (2015) the Role of Information Communication Technology in Nigeria Educational International Journal of Research in Humanities and Social Studies Volume 2 (2), 64-68.
- E Obi, MI Obiakor (2021) Sociological Impact of (Covid-19) on Education of Secondary School Students in Awka South Local Government Area of Anambra State. *UNIZIK Journal of Educational Research and Policy Studies* 9, 86-94
- Federal Republic of Nigeria (2010). National Policy on Education, 4th ed., Lagos: Nigeria Educational Research and Development Council.
- Hassan H., Abdullah A. and Chekum C. (2020) difficulties faced by Teachers in Using ICT in Teaching –Learning at Technical and Higher Educational Institutions in Uganda *International Journal of Engineering Research & Technology (IJERT)*, 1 (7), 1-9.
- Idowu A.I. and Esere M. (2013) ICT and higher educational system in Nigeria, *Journal of Educational Review and Research*, 8 (21), 2021-2025.
- Iloanusi M.P. and Okekeosisi O.C. (2019) challenges of implementing E-Learning in Nigeria Educational System In the Covid – 19 Pandemic Era *Social Sciences and Educational Research Review*, (7)2 152-171.
- MI Obiakor, P Nwakpa (2022) Principals provision of learning management systems in secondary schools in enugu education zone during COVID-19 lockdown: *African Journal of Educational Management, Teaching and Entrepreneurship ...*
- Odim. Toyobo O.M. Adika L.O. and Adeyinka A.A. (2017) an Assessment of Secondary School Teachers uses of ICTs: implications for further Development of ICT's use in Nigerian Secondary Schools. *The Turkish Online Journal of Educational Technology* 6 (1), 1-13.
- Okechukwu Oliver, Ph.D.&Agbo, Roseline Chinyere (2021) Use Of Information Communication Technology In Teaching And Learning Of Business Education In Secondary Schools In Enugu East Local Area, Enugu State Hkay
- Olokoba, Abudullahi&Omosidi, (2014) opportunities and challenges of integrating ICT in Education Delivery in the Institute of Continuing Education at the Open University Of Tanzania. A dissertation submitted in partial fulfillment of the Requirements for the degree of Master of Education in Administration, Planning and Policy Studies of the Open University of Tanzania.
- UNESCO (2020) Education; from Disruption of Recovery Technology in Secondary Schools in Nigeria, *Educational Technology & Society* 8(1), 104-112
- WN Ofojebe, MI Obiakor (2021)The level of universities academic staff engagement in computer-based training programmes for empowerment towards using emerging technologies in era of covid-19 pandemic in Nigeria: *Int'l Journal of Education Research and Scientific Development* 1 (2), 16-16
- Yusuf M.A., Afolabi F.O. &Loto A.B. (2015) appraising the role of Information Communication Technology ICT as change agent for Higher Education *International Journal of Education, Administration and Policy Studies* 5 (8), 177 183.