FACTORS MITIGATING THE USE OF E-LEARNING TECHNOLOGIES DURING THE COVID-19 PANDEMIC IN EGOR LOCAL GOVERNMENT AREA OF EDO STATE

BY

Regina Osarugue OKAO
EDU1702653

FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY

JULY, 2021

FACTORS MITIGATING THE USE OF E-LEARNING TECHNOLOGIES DURING THE COVID-19 PANDEMIC IN EGOR LOCAL GOVERNMENT AREA OF EDO STATE.

BY

Regina Osarugue OKAO
EDU1702653

A PROJECT SUBMITTED TO THE DEPARTMENT OF CURRICULUM AND INSTRUCTIONAL TECHNOLOGY, FACULTY OF EDUCATION, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE AWARD OF THE BACHELOR OF SCIENCE (ED) DEGREE IN COMPUTER SCIENCE.

JULY, 2021

CERTIFICATION

We undersigned, certify that this research work was carried out by Okao Regina Osarugue in the Department of Curriculum and Instructional Technology, Faculty of Education, University of Benin, Benin City in partial fulfillment of the requirement of the award of the Bachelor of Science (ed.) degree in Computer science.

_____ _____

Mr. Frank O. Egbenoma **Date**
Project Supervisor

_____ _____

Dr. (Mrs.) F.N. Ofuani **Date**
Project Co-ordinator

_____ _____

Prof. E.O.S. Iyamu **Date**
Dean, Faculty of Education

DEDICATION

This research work is dedicated to God Almighty, always loving Father, my very present help in times of need and my sufficiency. His unending grace has seen me through my academic pursuit in University of Benin.

ACKNOWLEDGEMENTS

I am immensely indebted to God Almighty, who made it possible for me to initiate and accomplish this research work.

I articulate my sincere gratitude with special thanks to my supervisor Mr Frank O. Egbenoma who happens to be an icon, mentor, motivator, friend, and a corrector for his fatherly roles he played throughout the course of this research work. His input at the planning and execution stages, gave direction to the work, his academic, moral and leadership qualities were propelling forces and so were his constructive criticisms

I will also like to acknowledge the effort of the HOD, all the lecturers in the Department of Curriculum and Instructional Technology for all the knowledge you all impacted on me and other members of the staff, both academic and non-academic.

I am indebted to my parents Mr Henry Okao and Mrs Florence Okao for believing so much in me; for their love, moral and financial supports towards my education. And my lovely sister Sarah Okao she has been a source of immense motivation to me. I am grateful.

My sincere gratitude goes to all my classmates and friends Mary-Cythnia Ogboh, Laura Nduka Uche, Nwobodo Chinyere Edith, Adebayo prosper, Abdulazeez and Guygreg. I really love you all, God bless you all.

TABLE OF CONTENTS

LIST OF TABLES

Abstract

The study investigated the factors mitigating the use of E-learning technologies during the Covid-19 pandemic in Egor local government area of Edo state. 200 students from secondary schools in Egor local government area were used for the study. Four research questions were raised to guide the study. The population of the study comprised of the comprised of four thousand one hundred and eighteen (4118) senior secondary schools in Egor Local Government Area while the sample for the study comprised two hundred (200) students were selected from seven (7) schools in Egor Local Government Area of Edo State.

A structured questionnaires titled: Factors Mitigating The Use of E-learning Technology during Covid – 19 Pandemic (QFMETP) was used for data collection. The questionnaire was validated by the researcher's supervisor as well as two other experts in the Department of Curriculum and Instructional Technology while the test-re test reliability method was adopted to ascertain the reliability of the instrument which yielded a co-efficient index of .724. Data were analyzed with simple percentage method.

The results revealed that the challenges of e-learning in Edo state are lack of proper orientation, low funds, shortage of trained personnel and software and finally most of the teachers aren't computer literate, the difficulties in the use of e-learning in the face of covid-19 in Egor local government area are low funds, unavailability of internet facilities, no trained personnel and software and also the problem of no regular power supply in the community, E-learning would contribute better in the academic performance of students when compared to classroom conventional learning It was also revealed that if teachers are trained in the use of e-learning, data prices are reduced, subject oriented softwares are built and the schools are provided with good electricity generating sets, the use of e-learning would be improved. It is therefore recommended that government should be proactive in ameliorating the challenges identified in this study and build on the opportunities e-learning offers educational institutions even post covid-19, for e-learning to be effective, appropriate measure should be given to maintenances,

provision of stable internet provider to support easy and fast learning and teaching and Electricity is one of the driven force and backbone of computer and computer tools, so Government should finance and connect the rural areas particularly to a stable electric grid, basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers, and government should provide educational packages for data usage for educational purpose and softwares be built for subject specifications

CHAPTER ONE

INTRODUCTION

Background to the Study

Education is the central concern of the individuals, institutions, and countries for their development. It is a system that helps to build a relationship between institutions and various countries. The result or outcome of the education system is the critical factor that determines the quality of education. Hence, there should be clarity on the curriculum for an in-depth understanding of the subject content. The quality of education must be evaluated from the students' perspective because they are the end-users of the product. High quality of higher education is a prerequisite component in delivering knowledge and skill development. The quality of education comprises the visible (course materials) and invisible (delivery to the students) elements. The developing and developed countries need to ensure the quality of education to equip the students to face the competitive world. Educational institutions focus not only on education but also on involving the students in research, creativity, and innovation. Educational institutions

need to come up with an exciting way of learning and work closely with the industries to bring innovative ideas for the changing environment.

Teaching can be defined as an active process in which one person shares information with others to provide them with the information to make behavioural changes. Learning on the other hand is the process of assimilating information with a resultant change in behavior (Teressa 2000). Teaching-Learning process is a planned interaction that promotes behavioural change that is not a result of maturation or coincidence (Teressa 2000). E-education is an electronic mode of knowledge sharing and transmission, which may not necessarily involve physical contact between teacher and student (Mac-Ikemenjima, D. 2003). The concepts of computer-aided teaching and learning have given birth to computer-aided instruction, which represents a combination of both teaching and learning (Osah-Ogulu, D & Mac-Ikemenjima, D. 2004).

Electronic Learning (e-Learning) is an electronic delivery and administration of learning opportunities and support via computer network and web-based technology (Adu et al, 2013). It covers a wide range of systems, from students using e-mail to accessing course work on-line. E-

Learning can be of different types: Web supplemented, Web-dependent and mixed mode (OECD, 2005). Application and processes of e-Learning include web-bases learning, computer-based learning, virtual classroom, video conferencing and digital collaboration where contents are delivered via the internet, intranet/extranet, audio/video tape, satellite TV, CD-Rom. ELearning creates a self-centred approach to learning by relaxing time and space, enriches learning content and enhances wider access to information resources.

As we see now in the world, the COVID-19 pandemic is forcing educational institutions such as universities to shift rapidly to distance and online learning. COVID-19 has forced the universities around the world to adopt online learning. We are now in a state of emergency and must react with different and available ways of learning such as e-learning systems and mobile learning applications. Online learning is not new to learners, nor is distance learning. However, COVID-19 is reviving the need to explore online teaching and learning opportunities.

According to UNESCO (2020) confirms that universities and schools closure have several adverse consequences on students such as interrupted

learning which results in students and youth being deprived of opportunities for growth and development. Therefore, online digital learning systems can address this problem with easily access to these systems and offer fast internet connections. In fact, e-learning tools are playing a crucial role during this pandemic. E-learning systems can assist learning providers to manage, plan, deliver and track the learning and teaching process. Furthermore, it aims to help instructors, schools and universities facilitate student learning during periods of universities and schools closure. In addition, most of these systems are free which can help ensure continuous learning during this Corona virus pandemic.

In Nigeria, school opportunity is correlated to income level, and public schools differ from private schools in the populations they serve. While private schools serve learners from higher socio-economic backgrounds that are willing and able to pay more to access the better resources offered by private schools, public schools which are usually free, comprise students from lower socio-economic households and low-income areas. In instances where distance learning opportunities are available, uptake will be low from the students in the public school's category, as a

result of poor infrastructure such as lack of electricity, or poor/no internet connectivity, etc.

Government from one country to another has been battling with strategies and methods to stop the pandemic and its spreading. Social distancing, self-quarantine, Isolation, and lockdown have become major and acceptable approaches to curtail spread of COVID-19 Pandemic. Consequently Computer mediated and Digital Communication Technologies has replace face to-face system of communication. During this period people have been restricted to their homes, and cyberspace space has become a place of refuge from the risk of infection of COVID-19.

The question now is, how many Nigerians has what it takes to communicate effectively with the use of Computer mediated and Digital Communication Technologies? Digital divide is one of the factor mitigating computer mediated communication approaches (McLean, Pamela. 2017; Intel Corporation 2007). Now that people are restricted to their homes the gap between demographics and regions that have access to modern information and communications technology, and those that do not or have

restricted access now been perceived by majority of Nigerians especially those working in Cities but live in the rural areas.

The digital divide technology and devices include the mobile devices, televisions, personal computers and the Internet, and high subscription and infrastructure costs, coupled with the poor quality of service by service providers is one of the factors contributed to digital divide (Nkanu, W.O. 2017). Majority of Nigerians are ICT illiterate with little or no idea of awareness, knowledge, and interaction. In recent time some Nigerian are now digital Immigrants as they are struggling to be connected and use digital devices for communication.

Given that the school partial closures are currently opening up; these students would continue to fall further behind. For students with learning disabilities in science, and those living in fragile and conflict-affected regions, the outlook is even bleaker. By implication, this raises a major challenge around educational inequality - given the technological landscape and income driven digital-divide, how do we harness available technology to support already marginalized students during these closures? For Nigeria, the reality is simple - while the school closures are necessary to curtail the

spread of the COVID19 virus, until the ban on movement is lifted and schools are reopened, majority of students will not be learning. We provide evidence from the research and examples to inform policy and programming decisions. If this is unaddressed, the gap in education quality, and inadvertently socio-economic equality could become more extreme as a result of the school partial system of learning.

Statement of the Problem

E-learning is still confronted with a lot of challenges in Nigerian Universities especially during this pandemic as this is the only medium available for learning. One of these challenges might be epileptic power supply in Nigeria especially in rural areas as there is no guarantee of at least two hours‟ power supplies at a stretch. Irregular power supply in Nigeria is seen as an age-long problem which has affected almost every aspect of Nigeria economy with no exception to the educational sector. This unstable poor power supply has caused a major setback for technological advancement of many universities in Nigeria. Most rural areas in Nigeria where some students are resident are not even connected to the national grid and as such, this student will experience difficulty in utilizing the e-learning

platform effectively. Also, shortage in power supply has brought difficulty in powering of educational gadget such as smartphones, laptops and desktop computers needed for learning.

Another major obstacle to e-learning in Nigeria is tied toward is the high cost of internet data services. The internet service required to connect to this e-learning platform sometimes requires a lot of data. The cost of purchasing the data bundle is so high which might be difficult for both students and lecturers. In cases where is even data, poor internet connectivity by network providers is of major concern especially when it comes to video conferences where both the students and lecturers have to interact. The cost of accessing the internet in Nigeria is still on the high side. Hence, some students find it a challenge to afford. It is against this background that the present study seeks to find out the factors mitigating the use of e-learning technologies during the COVID-19 pandemic in Edo state.

Research Questions.

The following research questions have been formulated to guide the study.

1. What are the challenges of e-learning in Egor Local Government Area of Edo State?

2. What are the difficulties in the use and implication of e-learning in the face of covid-19 in Egor Local Government Area of Edo State?
3. What are the impacts of Covid-19 on e-learning when compared to classroom conventional learning in Egor Local Government Area of Edo State?
4. What are strategies in improving e-learning in secondary schools in Edo state in Egor Local Government Area of Edo State?

Purpose of Study

The purpose of this study is to carry out assessment on factors mitigating the use of e-learning technologies during the COVID-19 pandemic in Egor Local Government Area of Edo State. Specifically, the study intends to:

The following objectives would be answered in the course of this investigation:

1. Assess the challenges of e-learning in in Egor Local Government Area of Edo State.

2. Identify Difficulties in the use and implication of e-learning in the face of covid-19 in Egor Local Government Area of Edo State.

3. Examine the impact of Covid-19 on e-learning when compared to classroom conventional learning in Egor Local Government Area of Edo State.

4. Identify strategies in improving e-learning in secondary schools in Egor Local Government Area of Edo State

Significance of the Study

The study will invariably be of tremendous importance to students, teachers and researchers in science accordingly. The work will enable students to read and understand various e-learning aids that facilitate teaching learning process, particularly the mobile phone. The Study will serve as reference to teachers who wish to find out the impact of e-learning on students' academic achievement particularly in secondary schools. It will also highlight the appropriate materials of teaching which will bring about student's interest and active participation in the subject.

The work will enable the teachers to understand that the success of any teaching-learning activities is determined by how much the students are able to learn or gain from teaching. This can be achieved through the use appropriate teaching aids, methods and e-learning materials. The study will serve as a reference to researchers who wish to embark on further research on effects of audio-visual aids on students' academic achievement.

Scope and delimitation of the Study

The scope of the study is to carry out factors mitigating the use of e-learning technologies during the COVID -19 pandemic in Egor Local Government Area of Edo state. The study will determine the factors that delimit the use of e-learning and other electronic means of teaching and learning. The study is therefore limited to secondary schools in Egor Local Government Area of Edo State.

Definition of Terms

E-learning: Refer to the learning utilizing electronic technologies to access educational curriculum outside the traditional classroom setting during Covid 19 period.

Mitigating: Hindrances to the acquisition of Computer knowledge and the use of ICT in the teaching and learning process during Covid 19 period.

Teaching: The act of passing knowledge or values from a skilled person to an unlearned person through any suitable ICT.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter focuses on the review of related literature. And it will be discussed under the following sub-headings:

- Conceptual framework
- Challenges of e-learning in Nigeria
- Difficulties in the use and implication of e-learning in the face of covid-19.
- The impact of Covid-19 on e-learning when compared to classroom conventional learning.
- Strategies in improving e-learning in secondary schools
- Summary of Reviewed Literature

Conceptual framework

The Internet has become one of the vital ways to make available resources for research and learning for both teachers and students to share and acquire information (Richard and Haya 2009). Technology-based e-learning encompasses the use of the internet and other important

technologies to produce materials for learning, teach learners, and also regulate courses in an organization (Fry, 2001). There has been extensive debate about a common definition of the term e-learning. Existing definitions according to Dublin (2003) tend to reveal the specialization and interest of the researchers. E-learning as a concept covers a range of applications, learning methods and processes (Rossi, 2009). It is therefore difficult to find a commonly accepted definition for the term elearning, and according to Oblinger and Hawkins (2005) and Dublin (2003), there is even no common definition for the term. Holmes and Gardner (2006) also made a comment on these inconsistencies by saying that there may be as many definitions of the term e-learning as there are academic papers on the subject Dublin (2003) in trying to find a common meaning of the term e-learning went on to ask the following questions: Is e-learning an on-line coursework for students at a distance? Does it mean using a virtual learning environment to support the provision of campus based education? Does it refer to an on-line tool to enrich, extend and enhance collaboration? OR is it a totally on-line learning or part of blended learning? (Dublin, 2005). Some of the

definitions of the term e-learning as given by different researchers and institutions are reviewed below.

E-learning refers to the use of information and communication technologies to enable the access to online learning/teaching resources. In its broadest sense, Abbad et al (2009), defined E-learning to mean any learning that is enabled electronically. They however narrowed this definition down to mean learning that is empowered by the use of digital technologies. This definition is further narrowed by some researchers as any learning that is internet-enabled or web-based (LaRose et al, 1998; Keller and Cernerud, 2002).

Technology has indeed made the world a global village and it has more impacts than traditional classroom learning. E-learning has the capacity to play a pivotal role in improving the state of education in Nigeria. Therefore, Nigerians should see the urgent need to use electronic learning of the 21st century as a solution to the falling standard of education. Schools across the country should adopt e-learning as a role model in reviving educational standard in the country. The new innovation enhances teaching and learning through the applications of ICT tools. Teachers as an agent of

change, guidance, innovators, creative thinkers, experimenters and researchers should focus more on e-learning method to expose their students on new learning trends. The curriculum planners should also develop content on software with e-learning platform to help in sustaining them with e-teaching and e-learning respectively.

With the growing trends of ICT being a tool for teaching and learning in Nigeria, it will pave way for educational reform. It will be recalled that in Nigerian, Governments formulated and launched an ICT policy in 1987. The policy was titled "The National Policy on Computer Literacy and Education". This is geared on equipping Nigerians at all levels of education with the preliminary ICT tools.

According to section 11, sub-section 102 (a & b) of the National Policy on Education (FRN, 2004) stipulates thus:

1. A network of educational service centers in Nigeria (NESCN) shall be set up to provide a forum for exchange of ideas on the development and use of innovative materials for improvement of education.

2. All states, teachers, resource centres, institutes of education of Universities and other professional bodies, shall belong to the network of ICT.
3. That government shall provide facilities and necessary infrastructure for the promotion of ICT at all levels of education (p. 54).

These remarkable objectives of the government indicates that plans have to be made on the proper integration of ICT into the Nigerians educational curricula. Teachers and students have to prepare to use ICT facilities in their teaching and learning. In agreement with the above assertion, UNESCO (2003) stated that teachers and teacher educators are of central importance in tapping the potentials offered by ICT, to enhance the quality of education. As a chief actor in teaching and learning, UNESCO guidelines states:

1. Understanding the regional guideline for ICT integration in teaching and learning.
2. Comprehending the analytical framework of competency standards for ICT-integration.
3. Integrating productivity-enhancing ICT tools, in the teaching-learning context.

4. Enhancing teaching and facilitating learning using multi-model courseware shareware.
5. Integrating ICT using pedagogical innovations, to develop higher order thinking skill among learners.

There are diverse ways of classifying the types of e-learning. According to Algahtani (2011), there have been some classifications based on the extent of their engagement in education. Some classifications are also based on the timing of interaction. Algahtani (2011) divided e-learning into two basic types, consisting of computer-based and the internet based e-learning.

According to Algahtani (2011), the computer-based learning comprises the use of a full range of hardware and software generally that are available for the use of Information and Communication Technology and also each component can be used in either of two ways: computer managed instruction and computer-assisted-learning. In computer assisted-learning, to him, computers are used instead of the traditional methods by providing interactive software as a support tool within the class or as a tool for self-learning outside the class. In the computer-managed instruction,

however, computers are employed for the purpose of storing and retrieving information to aid in the management of education.

The novel Coronavirus disease 2019 (COVID-19), first identified in Wuhan China in December 2019, 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, 2020) become 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 (Worldometers, 2020). On February 27, 2020, an Italian citizen became the index case for COVID-19 in Nigeria and as at April 9, 2020, there were 28 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 enlightenment campaigns for good hygiene and social distancing. Temperature screening was conducted at airports and

those returning from countries with numerous confirmed cases of COVID-19 were implored to self-isolate. The NCDC in association with State governments also began tracking and tracking of possible victims and their contacts. On March 18, 2020, the Lagos State government suspended all gatherings above fifty people for four weeks and ordered all lower and middle level public officers to stay-at-home (Ewodage, 2020). Similarly, the Federal government, on March 30, 2020 introduced various containment strategies such as closing of the national borders and airspace, schools, worship centers and other public places, canceling 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 in Edo State while State governments opened isolation centres and imposed dawn to dust curfews in their territories.

COVID-19, from the family of Coronavirus (others include Severe Acute Respiratory Syndrome (SARS), Hemagglutinin Type 5 and Neuraminidase Type 1 (H5N1), Hemagglutinin Type 1 and Neuraminidase Type 1 (H1N1) and Middle

East respiratory Syndrome (MERS), is a contagious respiratory illness transmitted through the eyes, nose, and mouth, via droplets from coughs and sneezes, close contact with infected person and contaminated surfaces. It has an incubation period of approximately one to fourteen days. The symptoms include cough, fever and shortness of breath, and it is diagnosed through a laboratory test. The contagion could lead to severe respiratory problems or death, particularly among the elderly and persons with underlying chronic illnesses.

Some infected persons however, are carriers for the virus with no symptoms while others may experience only a mild illness and recover easily (Sauer, 2020).

As there is currently no cure or vaccine for the COVID-19; medical treatments are limited to supportive measures aimed at relieving symptoms, use of research drugs and therapeutics. Unfortunately, the educational sector is a part of the receiving end.

According to UNESCO, an estimated 1.725 billion learners have been affected as a result of school closures, representing about 99.9% of the world's student population as of April 13th, 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 students to take courses at their own time and pace, it is more convenient than their in-person counterparts. The flexibility of e-learning stating that students can even refer back to previous lectures without affecting the learning pace of other students. Forums and communities built around the massive online open courses (MOOC) add to the usability of these e-learning programs (UNESCO and COL, 2012).

Challenges of e-learning in Nigeria

In this technological age, a functional educational system enabled by information and communication technology would be a veritable tool for improving performance and the overall standard of an education system. Integration of information and communication technology (ICT) into the education system and with particular reference of adoption of E-Learning as

instructional delivery media is the current craze in the Nigerian education sector and indeed all over the world.

The paradigm shift from the traditional educational system to ICT based teaching and learning is rapidly becoming one of the most widely discussed issues in the contemporary education policies (Theorer 2000). According to Groff, Howells and Grammar (2012) most experts in the education industry agreed that when properly used, information and communication technology holds great promise to the improvement of teaching and learning. Through the use of Audio, text, multicolor images, graphics, motions and others, ICT gives ample and exceptional opportunities to students to develop capabilities for high quality learning and increased innovative abilities (Rangsway and couples, 2006). It offers some powerful tools for the improvement of the existing traditional learning environment and systems or structure without necessarily altering the curriculum element.

Globally, the essence of ICT in teaching and learning had been recognized. There has been continued strong desire to equip schools with computer facilities and qualified personnel in both the developed and the developing countries of the world. Nations have identified the need for

investment and integration of ICT in the implementation of the curriculum in order to improve teaching and learning in schools and the overall standard of education. In realization of the huge potentials of ICT in education, Government have heavily invested in developing their respective ICT in education plans and bring various ICT equipment and resources into school (UNESCO, 2008).

In Nigeria, the adoption of ICT in the educational system and with particular reference to secondary schools has been sluggish, or in fact near to nothing. According to Gulbahar (2007), huge educational investments in this regard have produced little evidence of ICT adoption and used in teaching and learning.

A number of factors challenges the use of E-learning as a mode of instructional delivery, positively and or negatively. These include; cost, infrastructure, skills, relevant software's, access to the internet etc.

On a general note, several researchers have identified factors that influence the adoption and integration of ICT into the educational system. E-learning as an ICT based model shares in those factors. Rogers (2003) identified five technological characteristics or attributes that influence the

decision to adopt an innovation. Stock dill and Morehouse (2002) also identified user characteristics, content characteristics, technological considerations, and organizational capacity as factors influencing ICT adoption and integration into teaching.

Teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology and other factors should be considered when examining ICT adoption and integration. Specifically some of the factors include:

Personal Characteristics/ Attitudes:

Personal characteristics, educational level, age, gender, educational experience, knowledge of the use computer for educational purposes and attitude towards computer can influence the adoption of the technology. Teachers are 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 (Jones, 2001). The attitudes of teachers towards technology greatly influence their adoption and integration of computers into their teaching.

Teaching Experience:

Though some research reported that teachers' experience in teaching did not influence their use of computer technology in Gorder (2008) reported that teachers' experience is significantly correlated with the actual use of technology. In her study, she revealed that effective use of computer was related to technological comfort levels and liberty to shape instruction to teacher-perceived student needs.

Cost:

The price of computer hardware and software continues to drop in most developed countries, but in developing countries, such as Nigeria, the cost of computers is several times more expensive. Majority of the secondary schools in Nigeria are short of books, paper and pencils. Many of the schools lack adequate infrastructure such as class rooms and only few are equipped with television and radio. Apart from the basic computers themselves, other costs associated with peripherals such as printers, monitors, paper, modem, and extra disk drive are beyond the reach of most secondary schools in Nigeria. The schools cannot afford exorbitant internet connection fees too.

Weak Infrastructure:

In Nigeria, a formidable obstacle to the use of information and communication technology is infrastructure deficiencies. Computer equipment was made to function with other infrastructures such as electricity under "controlled conditions". Over the years, Nigeria has been having difficulties in providing stable and reliable electricity supply to every nook and cranny of the country without success. Currently, there is no part of the country, which can boast of electricity supply for 24 hours a day except probably areas where government officials live.

Lack of Skills:

Nigeria does not only lack information infrastructure, it also lacks the human skills and knowledge to fully integrate ICT into secondary education. To use information and communication technology (ICT) in secondary schools in Nigeria, the need for locally trained workers to install, maintain and support these systems cannot be over emphasized. There is acute shortage of trained personnel in application software, operating systems, network administration and local technicians to service and repair computer facilities. Those who are designated to use computers in Nigeria do not

receive adequate training, in some cases they do not receive any training at all (Okebukola, 1997).

In Nigeria also, most secondary school teachers do not possess the skills required to fully utilize technology in curriculum implementation hence the traditional chalk and duster approach still dominates the secondary school pedagogy.

Lack of Relevant Software:

Although software developers and publishers in the developed countries have been trying for long to develop software and multimedia that have universal application, due to the differences in education standards and requirements, these products do not integrate into curriculum across countries. Software that are appropriate and culturally suitable to the Nigerian education system is in short supply. There is a great discrepancy between relevant software supply and demand in developing countries like Nigeria. According to Salomon (1989), there are clear indications from many countries that the supply of relevant and appropriate software is a major bottleneck obstructing wider application of the computer.

Limited Access to The internet:

In Nigeria there are few internet providers that provide internet gateway services to Nigerians. Many of these companies provide poor service to customers and often exploit and defraud them. The few reputable companies, which render reliable services, charge high fees thus limiting access to the use of the internet. The greatest technological challenge in Nigeria is how to establish reliable cost effective internet connectivity.

Secondary schools in Nigeria are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms let alone being given adequate funds for higher-tech equipment (computers) and internet connectivity. Again, due to the lack of adequate electricity supply, especially in rural areas secondary schools located in those areas have no access to the internet and are perpetually isolated and estranged from the world's information superhighway.

Difficulties in the use and implication of e-learning in the face of covid-19.

The term e-Learning means something different to almost everyone who uses it. Some use the term to refer to pieces of content packaged using

technical infrastructures. Some think only of web-based self-study, while others realize e-learning can encompass real-time learning and collaboration. Almost all agree that

E-learning is of strategic importance and should be highly adopted for current learning style. Parks (2013) posits that the word “e” should refer to “everything everyone, engaging and easy” in addition to electronic“. E-Learning refers to the use of internet/ICTs i.e. Information and Communication Technology to enhance and support teaching and learning process,

According to Eze, Chinedu-Eze and Bello (2018), e-learning is concerned with the holistic incorporation of modern telecommunication equipment and

ICT resources into the education system. The term e-learning connote electronic method of learning which is associated with computerized learning in an interactive interface at the convenience of both the learners and lecturers. E-learning also implies educationally technology. The benefits of the e-learning include better content delivery, interactivity, quality content delivery and confidence of both learners and lecturers in the educational

sector. Despite the advantages of the e-learning, it is still at its infancy and early adoption stage in Nigeria due to its dynamic structure. Nevertheless, e-learning is seen as the only option to keep the educational system running in the event of the pandemic (Anaekwe & Anaekwe, 2020). This implies that utilization of e-learning in Nigeria for instructional delivery encounters various problems.

E-learning is still confronted with a lot of challenges in Nigeria educational system especially during this pandemic as this is the only medium available for learning. One of these challenges is epileptic power supply in Nigeria especially in rural areas as there is no guarantee of at least two hours‟ power supply at a stretch. Irregular power supply in Nigeria is seen as an age-long problem which has affected almost every aspect of Nigeria economy with no exception to the educational sector. This unstable poor power supply has caused a major setback for technological advancement of many educational institutions in Nigeria.

Most rural areas in Nigeria where some students are resident are not even connected to the national grid and as such, this student will experience difficulty in utilizing the e-learning platform effectively. Also, shortage in

power supply have brought difficulty in powering of educational gadget such as smartphones, laptops and desktop computers needed for learning.

Another major obstacle to e-learning in Nigeria is tied towards the high cost of internet data services. The internet service required to connect to this e-learning platform sometimes requires a lot of data. The cost of purchasing the data bundle is so high which might be difficult for both students and lecturers.

In cases where there is even data, poor internet connectivity by network providers is of major concern especially when it comes to video conferences where both the students and lecturers have to interact. The cost of accessing the internet in Nigeria is still on the high side. Hence, some students find it a challenge to afford. The cost of a personal computer (PC), Laptop and smart phones suitable for e-learning are still very high in Nigeria considering the income level of an average worker in the country. Few students that are privileged to have a PC/Laptop are not connected to the internet as this do attract extra cost which they cannot afford. Also, this poor internet connectivity and high cost of data has resulted in low attendance of students during the online classes (Eze, 2016). This low online

class attendance has also been linked to the poverty situation in the country as some families and students might not be able to afford basic needs such as food and clean water let alone the expensive gadgets or resources to sustain them for online learning. According to Eze, another challenge posed by the e-learning education is the incapability of lecturers to assists learners develop the skills and training required to make the e-learning platform effective. E-learning creates room for complete absence of physical personal interactions between students and lecturers and among their colleague.

The impact of Covid-19 on e-learning when compared to classroom conventional learning

During the present pandemic crisis when the entire globe is sailing amid the storm, technology has played a pivotal role. Technological development and the internet have changed the lives of people immensely and have also brought a huge change in various fields (Nadikattu, 2020). Especially in the education system E-learning has been found to be a significant tool for effectively continuing the teaching-learning process during the lockdown. The web has become one of the important mediums of learning that opens the door for people around the world to access education

easily at free or lesser cost (Noor-Ul-amin, 2013). E-learning has fixed its root especially in the field of modern education. The need of modern learners is quite different and E-learning has been found beneficial for fulfilling their needs. The mediums of E-learning and principles of artificial intelligence are gradually gaining popularity in the world (Misko et al., 2004; Soni, 2020). It is providing a solution to the learners who are unable to access the traditional means of education due to the present pandemic situation. The present paper is going to unfold the aspects and impact of various E-learning platforms that the educational institutes have been following globally in diverse fields during the pandemic crisis of COVID-19.

Since the outbreak of the COVID-19 virus, educational institutions from all around the world have migrated from the traditional methods of learning to imparting education through online means. The education system has been suddenly shifted from the conventional classroom environment to electronic devices and online applications (Mnyanyi & Mbwette 2009) Most universities in India have asked the Professors and students to opt for e-learning platforms for educational purposes and to motivate students to study from their respective residents (Li, et al., 2013). The faculty members

were urged to provide study materials in the form of PPT, PDFs or Word documents and other forms such as audio, videos to upload on online platforms. Chinese universities have implemented online education since the starting of the 21st century. With the widespread of the virus, educational procedures have been accomplished via apps like Zoom and Voov. Various undergraduate and graduate courses have been provided to students through online means.

E-learning fulfils the needs of today's learners at their own comfort and requirements. Thus it has proven to be fruitful because of various reasons. It can be availed at any time at the learner's own convenience by purchasing the subscriptions of different platforms or logging in to access the courses (Colchester et al., 2017). It can share and offer teaching-learning materials in diverse formats such as slideshows, audios, videos, PDFs, e-mails, word documents and so on. Webinars and direct communications with teachers via various chat forums or messaging is also an open option in E-learning process. It offers free access to certain e-manuals like PDFs. It provides clear, easy, gradual instructions for better understanding of the learners. It is often regarded as the most suitable way for self-learning. It

provides a wide range of materials for the learners that covers almost all topics and doubts (Bajaj and Sharma, 2018).

Arora, (2013) studied the development of students with the use of ICT with complete virtual learning and their impact. The researcher compared the use of traditional method with the modern teaching methodology where the impact and use of ICT for learning on the student at university level, an objective type questionnaire was developed to collect the data. A sample size of 30 students was taken and the questionnaire was made to fill by them. It was concluded that there is a great impact of audio-visual aids in the teaching-learning process in Indore. According to the students, they find this method of teaching very effective. They said that if the topic shown to them are all related to their curriculum and gives them additional knowledge then they get more attracted towards this technology. It motivates students to attend lectures, as they are very curious to see or hear what the teacher is going to show them in the upcoming class. They say by seeing animated effects, colorful presentation and hearing recording they are able to concentrate more in class.

Further it was found; it develops a strong bonding between students and teacher and students open up with their queries and those who used to hesitate to ask a question they do not feel shy now. Thus, it makes an interactive learning and makes the teaching-learning process more effective. Students also say that text-books are knowledgeable but if they need updated knowledge then they refer to presentation and videos shown them in class and they also said that it saves there time from copying notes from the board and thus increasing more of communication in class.

Strategies in improving e-learning in secondary schools

Despite the challenges posed by integrating and embracing the e-learning system, it has become the most preferred platform to learn during global pandemic periods such as the COVID-19 where movement is restricted and institutions of learning are on lockdown. The e-learning system is the new era of learning that depends on the user mode (Aina, 2020). The adoption of e-learning system for Nigerian educational system will enhance the efficiency of knowledge as both students and teachers/lecturers will have easy access to a large amount of information within the global village. In most tertiary institutions, class space for

teachers/lectures is usually a problem as sometimes there is clash in timetable or overpopulated students.

The e-learning system will completely reduce the issues of insufficient classrooms for teachers as student can easily take the lectures online without any disruption at their convenience. Also, e-learning afford students and lecturers to participate in class in their comfort zone with basic amenities they need when compared to the traditional teaching method where sometimes these basic amenities are unavailable for conducive learning. This is supported by the findings of Pingle (2019) that undergraduates in India have a higher acceptance level of comfort working with computers and other e-learning packages than the traditional face-to-face classroom.

E-learning provides a platform for students to interact with themselves through the discussion forum which eliminates the barrier of participation. It also allows for effective communication and fosters relationship between students and lecturers. It also allows students to study at their open pace and convenience as the lecture material is readily available and the content

delivery of the lecturer is quite accessible to them. Hence, it increases satisfaction and decreases stress.

The knowledge of e-learning will expose both lecturers and students to the reality of the world outside the classroom since the world is a global web. The e-learning exposure will ease the student's integration into organizations where such platforms are operational.

Some of the strategies in improving e-learning in secondary schools include the following:

1. That government should be proactive in ameliorating the challenges identified in the use of e-learning and build on the opportunities e-learning offers educational institutions even post covid-19.
2. For e-learning to be effective, appropriate measure should be given to maintenances, provision of stable internet provider to support easy and fast learning and teaching.
3. Basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers.

4. Curriculum planner should try to integrate effective practical attainment strategy and how learner of e-learning can be evaluated in order for optimum functional education.
5. Electricity is one of the driven force and backbone of computer and computer tools, so Government should finance and connect the rural areas particularly to a stable electric grid.
6. The responsibility for computer study programme development for students and staff should be extended to all stakeholders and should not be limited to the ministry of education.
7. Finally, Federal Government should look into this proposed framework with the e-learning platforms used and practice continued education during the lockdown session and can also come up with other e-learning platforms that might have not been included here to achieve effective and continued education despite the ongoing global pandemic lockdown.

Summary of Reviewed Literature

An attempt has been made by the researcher to review literature pertinent to the study, a conceptual framework of the study was reviewed where the importance of e- learning was extensively reviewed and discussed.

This review revealed that the present world pandemic is making the educational sector to look inward. Institutions are now embracing e-learning which serves as alternative to the face-to-face contact learning thereby helping the institutions cover gaps the pandemic might cause the institutions academic calendar. The adoption of e-learning during the COVID-19 pandemic has exposed a lot of lapses and gaps to be filled in the Nigerian educational system. The challenges of e- learning in Nigeria ranges from irregular power supply, high internet subscription costs, poor internet access amongst other factors. The applicable opportunities associated with the embracing e-learning includes lecturers/learners convenience, exposure and cost benefits. Hence, the efficacy of e-learning platforms that will foster continued learning cannot be ignored.

Furthermore the literature reviewed the differences between the conventional teaching classroom and the ICT enhanced learning, it was seen

that ICT has brought about tremendous changes and evolution in the teaching and learning process especially in the COVID 19 era. Finally several strategies were listed to help improve e-learning in secondary schools.

CHAPTER THREE

METHODOLOGY

This chapter describes the research methodology that was used in the study under the following sub-headings:

- Research Design of the study
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design of the study

This study adopted a descriptive survey design to examine the factors mitigating the use of e-learning technologies during the COVID-19 pandemic in Egor local government Edo state. This was to enable the

researcher carry out systematic investigation and obtain information across population of the study. According to Kerlinger (1975) the descriptive design is a useful tool for educational fact- findings .This is because it has an added advantage of wide scope thereby allowing in-depth study of the variables of interest. The distinct characteristics of descriptive survey research design is that, it allows the use of questionnaire and at times interviews in order to determine opinion, attitudes, preference and perception of persons who are of interest to research (Borg & Gail, 1979)

Population of the Study

The population of the study comprises of all one hundred and fifty nine (159) government and private secondary schools in Egor local government area of Edo State. A total of four thousand, one hundred and eighteen (4118) students made up the population of the study.

Sample and Sampling Technique

The sample consists of two hundred (200) secondary school students from SS1 to SS3 which were drawn from four (4) government schools and three (3) private schools making a total of seven (7) secondary schools

which were purposively selected in Egor local Government Area of Edo state.

S/N	Name of school	Number of sample
1	Uselu secondary school	30
2	Evbareke secondary school	30
3	Federal government girls college	30
4	Benin technical college	30
5	Divine Group of Schools	30
6	High Tower Secondary Schools	30
7	Springfield High School	20
	Total	200

Research Instrument

The research instrument is a questionnaire designed by the researcher titled; “Factors Mitigating the use of E-learning Technologies During the COVID-19 Pandemic in Edo state". It is divided into two sections: Section A and B. Section A contains particulars of the respondents (demographic data) such as name of school, class, gender while section B contains twenty

items. The questions contained in the questionnaire revolve round the research questions raised in the chapter one of this study.

Validity of the Instrument

In order to ascertain the validity of the instrument, the questionnaire designed by the researcher was given to the researcher's supervisor and two lecturers in the Department of Curriculum and Instructional Technology (CIT) to scrutinize and for necessary corrections to ensure content as well as face validity. Corrections made on the draft was incorporated in the final draft.

Reliability of the Instrument

20 copies of the questionnaire were administered to the respondents. The data collected after the administration was analysed using Cronbach Alpha, the reliability of the instrument was established at 0.724.

Method of data collection

The questionnaire was administered personally by the researcher to the respondent that were selected from the sample students on the

permission of the school principal. The respondent were assured of total confidentiality and were urged to answer the questions honestly to the best of their knowledge. Instructions were given to the respondent on how to fill the questionnaire and the questionnaire were collected the same day to avoid incident of loss.

Method of data analysis

The data collected were properly organized and tabulated. The responses were statistically analysed by the use of frequency count and simple percentage.

CHAPTER FOUR

PRESENTATION OF RESULT AND DISCUSSION OF FINDINGS

The purpose of this chapter is to report, illustrate and discuss the result of the research. It involves the presentation and analysis of the data generated in the course of the research. This analysis was made using frequency count and simple percentage. The presentation and analysis were also made in line with the research questions raised in chapter one. The results of this finding are also discussed.

SECTION A:

Demographic Data for the Students

Table 1: Distribution of Respondents by Gender

Gender	Frequency	Percent
Male	48	24
Female	152	76
Total	**200**	**100**

Source: Researcher's fieldwork, 2021

Table 2: Distribution of Respondent by class

Class	Frequency	Percent
JSS1	NULL	-
JSS2	NULL	-
JSS3	3	1.5
SS1	9	4..5
SS2	31	15.5
SS3	157	78.5
Total	**200**	**100**

Source: Researcher's fieldwork, 2021

Table 3: Distribution of Respondents by school

School	Frequency	Percent
Public	32	16
Private	168	84
Total	**200**	**100**

Source: Researcher's fieldwork, 2021

Table 4: Distribution of Respondents by school type

School type	Frequency	Percent
Boys school	Null	-
Girls school	43	21.5
co-educational school	157	78.5
Total	**200**	**100**

Source: Researcher's fieldwork, 2021

SECTION B:

Answering of Research Questions

Research Question 1: What are the challenges of e-learning in Egor local government area?

Table 5: The challenges of e-learning in Egor local government area

S/N	ITEM	Strongly Agree	Agree	Strongly Disagree	Disagree	Mean
1.	There are no proper orientation on the use of e learning in my school.	163 **(81.5%)**	33 **(16.5%)**	4 **(2%)**	Null **(%)**	**3.8**
2.	My school does not have enough finance to afford e- learning in my school.	156 **(78%)**	28 **(14%)**	10 **(5%)**	6 **(3%)**	**3.7**
3.	There is acute shortage of trained	121 **(60.5%)**	37 **(18.5%)**	31 **(15.5%)**	11 **(5.5%)**	**3.3**

	personnel in application software in my school					
4.	There are no standard infrastructures to house an ICT laboratory in my school	129 **(54.5%)**	59 **(29.5%)**	3 **(1.5%)**	9 **(4.5%)**	**3.5**
5.	Most of my teachers are not computer literate.	112 **(56%)**	70 **(35%)**	5 **(2.5%)**	13 **(6.5%)**	**3.4**
	TOTAL/%	**681 (68.1%)**	**227 (22.7%)**	**53 (5.3%)**	**39 (3.9%)**	

Researcher Fieldwork 2021

Table 5 above shows the challenges of e-learning in Egor local government area. 163(81.5%) and 33(16.5%) of the respondents strongly agreed and agreed respectively that There are no proper orientation on the use of e learning in their schools. while 4(2%) strongly disagreed.

Similarly, 156(78%) and 28(14%) strongly agreed and agreed respectively that My school does not have enough finance to afford e-learning in their schools, but. 10 respondents representing (5%) and 6(3%) strongly disagreed and disagreed respectively Seeking opinion of the respondents on whether there are shortage of trained personnel in application

software in their schools, 121 of the respondents representing 60.5% strongly agreed, 37 respondents representing 18.5% agreed, while 31(15.5%) and 11(5.5%) strongly disagreed and disagreed respectively. On the opinion of standard infrastructures, 129 of the respondents representing 54.5% strongly agreed, 59 respondents representing 29.5% agreed, that there are no standard infrastructures to house an ICT laboratory in their schools, while 3(1.5%) and 9(4.5%) strongly disagreed and disagreed respectively

Lastly, 112 respondents representing 56% and 70(35%) agreed that most of their teachers are not computer literate, 5(2.5%) strongly disagreed, while 13(6.5%) disagreed.

Table 5 therefore concludes that some of the challenges of e-learning in Egor local government area are lack of proper orientation, low funds, shortage of trained personnel and software and finally most of the teachers aren't computer literate.

Research Question 2: What are the difficulties in the use of e-learning in the face of covid-19?

Table 6: Difficulties in the use of e-learning in the face of covid-19.

S/N	ITEM	Strongly Agree	Agree	Strongly Disagree	Disagree	Mean
1.	The cost of using e-learning systems is a challenge in my school	137 **(68.5%)**	63 **(31.5%)**	Null	Null	**3.7**
2.	There is no trained personnel to help in the usage of e-learning in my school	139 **(69.5%)**	58 **(29%)**	3 **(1.5%)**	Null	**3.7**
3.	There are no internet facilities in my community	126 **(63%)**	67 **(33.5%)**	Null	7 **(3.5%)**	**3.6**
4.	Software that are appropriate and culturally suitable to the Nigerian education system is in short supply	122 **(56%)**	59 **(29.5%)**	13 **(6.5%)**	6 **(3%)**	**3.5**
5.	There is no regular power supply in my community, hence the use of e-learning in my school is poor.	142 **(71%)**	49 **(24.5%)**	6 **(3%)**	3 **(1.5%)**	**3.6**
	TOTAL%	**666 (66.6%)**	**296 (29.6%)**	**22 (2.2%)**	**16 (1.6%)**	

Researcher Fieldwork 2021

The above Table6 shows the responses for difficulties in the use of e-learning in the face of covid-19. The responses of 137 of the respondents representing 63.5% and 63(31.5%) strongly agreed and agreed respectively that the cost of using e-learning systems is a challenge in their schools.

Similarly, 139 respondents representing 69.5% and 58(29%) agreed that there is no trained personnel to help in the usage of e-learning in their schools, while 3(1.5%) strongly disagreed. 126 of the respondent representing 63% strongly agreed and 67 representing 33.5% established that there are no internet facilities in their communities, while and 7(3.5%) disagreed. Correspondingly, 112 of the respondent representing 56% strongly agreed and 59 representing 29.5% agreed that software that are appropriate and culturally suitable to the Nigerian education system is in short supply, while 13(6.5%) and 6(3%) strongly disagreed and disagreed respectively

Finally, the respondents agreed there is no regular power supply in my community, hence the use of e-learning in their schools is poor, with 142 of the respondents representing (71%) strongly agreed, 49(24.5%) agreed,

while 6 of the respondents representing (3%) strongly disagreed and 3(1.5%) disagreed.

From the analysis of the table 6, the survey therefore concludes that the difficulties in the use of e-learning in the face of covid-19 in Egor local government area are low funds, unavailability of internet facilities, no trained personnel and software and also the problem of no regular power supply in the communities.

Research Question 3: What are the impacts of Covid-19 on e-learning when compared to classroom conventional learning?

Table 7 the impacts of Covid-19 on e-learning when compared to classroom conventional learning.

S/N	ITEM	Strongly Agree	Agree	Strongly Disagree	Disagree	Mean
1.	e-learning offers students a wide range of knowledge	136 **(68%)**	59 **(29.5%)**	Null	5 **(2.5%)**	**3.6**
2.	The use of e-learning would foster better understanding of difficult concepts	142 **(71%)**	53 **(26.5%)**	5 **(2.5%)**	Null	**3.7**
3.	In using e-learning systems students gain more by seeing animated effects,	154 **(77%)**	46 **(23%)**	Null	Null	**3.8**

	colorful presentation and hearing recording					
4.	The use of e-learning develops a strong bonding between students and teacher	109 **(54.5%)**	78 **(39%)**	7 **(3.5%)**	6 **(3%)**	**3.5**
5.	One of the benefits that comes along with e-learning is that it increases the concentration of students.	116 **(58%)**	81 **(40.1%)**	3 **(1.5%)**	Null	**3.6**
	TOTAL/%	**657 (65.7%)**	**317 (31.7%)**	**15 (1.5%)**	**11 (1.1%)**	

Researcher Fieldwork 2021

The above Table 7 shows response for the impacts of Covid-19 on e-learning when compared to classroom conventional learning. A cursory look at table 7 revealed that 136(68%) and 59(29.5%) strongly agreed and agreed respectively to the statement that e-learning offers students a wide range of knowledge, while 5 of the respondents representing 2.5% strongly disagreed. 142 respondents representing 71% and 53(26.5%) revealed that the use of e-learning would foster better understanding of difficult concepts, while 5(2.5%) strongly disagreed. Also, the respondents agreed with the statement that in using e-learning systems students gain more by seeing animated effects, colorful presentation and hearing recording. This was evidenced by

the respondents opinion which showed that 154 of the respondent representing (77%) and 46 representing (23%) strongly disagree and disagree respectively. 109 respondents representing 54.5% and 78(39%) bare that the use of e-learning develops a strong bonding between students and teacher, while 7(3.5%) and 6(3%) strongly disagreed and disagreed respectively.

Finally, the respondents agreed that one of the benefits that comes along with e-learning is that it increases the concentration of students, as 116 of the respondents representing (58%) strongly agreed, 81(40.5%) agreed, while 3 of the respondents representing (1.5%) strongly disagreed.

In the third objective, the study seeks to find for the impacts of Covid-19 on e-learning when compared to classroom conventional learning. Based on the result in table 7, the study therefore concludes that e-learning has a greater impact on students, compared to classroom conventional learning.

Research Question 4: What are strategies in improving e-learning in secondary schools in Egor local government area?

Table 8: strategies in improving e-learning in secondary schools in Egor local government area

S/N	ITEM	Strongly Agree	Agree	Strongly Disagree	Disagree	Mean
1.	provision of stable internet provider to support easy and fast learning and teaching	133 **(66.5%)**	65 **(32.5%)**	2 **(1%)**	null	**3.7**
2.	Regulation and cheap data plans especially for educational purposes	156 **(78%)**	32 **(16%)**	9 **(4.5%)**	3 **(1.5%)**	**3.7**
3.	Basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers	142 **(71%)**	49 **(24.5%)**	2 **(1%)**	7 **(3.5%)**	**3.6**
4.	There should be provision for generator sets	127 **(63.5%)**	63 **(31.5%)**	8 **(4%)**	2 **(1%)**	**3.6**
5.	Specified educational soft wares should be built for various subjects	123 **(61.5%)**	63 **(31.5%)**	14 **(7%)**	Null	**3.5**
	TOTAL/%	**681 (68.1%)**	**272 (27.2%)**	**35 (3.5%)**	**12 (1.2%)**	

Researcher Fieldwork 2021

Table 8 shows response for strategies in improving e-learning in secondary schools in Egor local government area. It reveals that 133(66.5%) and 65(32.5%) strongly agreed and agreed that provision of stable internet provider to support easy and fast learning and teaching. while 2 of the respondents representing 1% strongly disagreed. Similarly, 156 respondents representing 78% and 32(16%) agreed that regulation and cheap data plans especially for educational purposes, 9(4.5%) strongly disagree, while 3(1.5%) disagreed. 142 respondents representing 71% and 49(29.5%) agreed that basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers, 2(1%) strongly disagree, while 7(3.5%) disagreed. Most of respondents affirmed that there should be provision for generator sets. This was evidenced by the respondents opinion which showed that 127 of the respondent representing (63.5%) and 63 representing (31.5%) strongly agreed and agreed respectively, while 8(4%) strongly disagreed and 2(1%) disagreed respectively.

Finally, the respondents agreed with the statement that Specified educational soft wares should be built for various subjects, with 123 of the

respondents representing (61.5%) strongly agreed, 63(31.5%) agreed, while 14 of the respondents representing (7%) strongly disagreed.

In the fourth objective, seeking answers on strategies in improving e-learning in secondary schools in Egor local government area. Based on the result in table 8, the study therefore concludes that the use of e-leaning would improve if there is provision of stable internet connection in schools, Regulation and cheap data plans especially for educational purposes, regular power supply, Specified educational soft wares and basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers.

Discussions of Findings

The result of this study has been quite instructive, informative and revealing. Based on the analysis of data or information collected from the opinion of the respondents on: **Factors mitigating the use of E-learning technologies during the Covid-19 pandemic in Egor local government area of Edo state.**

The analysis of research question one, table 5 reveals that the challenges of e-learning in Egor local government area are lack of proper

orientation, low funds, shortage of trained personnel and software and finally most of the teachers aren't computer literate. In Nigeria, the adoption of ICT in the educational system and with particular reference to secondary schools has been sluggish, or in fact near to nothing. According to Gulbahar (2007), huge educational investments in this regard have produced little evidence of ICT adoption and used in teaching and learning. A number of factors challenges the use of E-learning as a mode of instructional delivery, positively and or negatively. These include; cost, infrastructure, skills, relevant software's, access to the internet etc.

The results of research question two, table 6 shows that the difficulties in the use of e-learning in the face of covid-19 in Egor local government area are low funds, unavailability of internet facilities, no trained personnel and software and also the problem of no regular power supply in the communities. According to (Anaekwe&Anaekwe, 2020) E-learning is still confronted with a lot of challenges in Nigeria educational system especially during this pandemic as this is the only medium available for learning. One of these challenges is epileptic power supply in Nigeria especially in rural areas as there is no guarantee of at least two hours‟ power supply at a stretch.

Irregular power supply in Nigeria is seen as an age-long problem which has affected almost every aspect of Nigeria economy with no exception to the educational sector. This unstable poor power supply has caused a major setback for technological advancement of many educational institutions in Nigeria

The results of research question three, table 7 shows that e-learning has a greater impact on students, compared to classroom conventional learning. E-learning has fixed its root especially in the field of modern education. The need of modern learners is quite different and E-learning has been found beneficial for fulfilling their needs. The mediums of E-learning and principles of artificial intelligence are gradually gaining popularity in the world (Misko et al., 2004; Soni, 2020).

Research question four, table 8 revealed that the use of E-learning would improve if there is provision of stable internet connection in schools, Regulation and cheap data plans especially for educational purposes, regular power supply, Specified educational softwares and basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to to find out the factors mitigating the use of E-learning technologies during the Covid-19 pandemic in Egor Local Government Area of Edo state. This chapter presents a summary of the research work, conclusion and recommendations.

Summary

The study assessed the factors mitigating the use of E-learning technologies during the Covid-19 pandemic in Egor local government area of Edo state. The study:

- assess the challenges of e-learning in Egor Local Government Area of Edo State.
- identify Difficulties in the use and implication of e-learning in the face of covid-19 in Egor Local Government Area of Edo State.
- examine the impact of Covid-19 on e-learning when compared to classroom conventional learning in Egor Local Government Area of Edo State.

- identify strategies in improving e-learning in secondary schools in Egor Local Government Area of Edo State.

Four research questions were raised. The descriptive survey research design was adopted in the study. A sample of 200 respondents was selected from a population of one hundred and fifty nine (159) government and private secondary schools in Egor local government area of Edo State. The researcher designed a questionnaire which was thoroughly scrutinized by the project supervisor was used for data collection. The instrument was validated and found to be reliable. It was personally administered by the researcher. The data collected were analyzed with the use of descriptive statistics of mean, frequency count and percentage.

Conclusion

Following the analysis of the data collected and finding made, the follow conclusions were drawn:

- The challenges of e-learning in Edo state are lack of proper orientation, low funds, shortage of trained personnel and software and finally most of the teachers aren't computer literate.

- The difficulties in the use of e-learning in the face of covid-19 in Egor local government area are low funds, unavailability of internet facilities, no trained personnel and software and also the problem of no regular power supply in the community.
- E-learning would contribute better in the academic performance of students when compared to classroom conventional learning.
- If teachers are trained in the use of e-learning, data prices are reduced, subject oriented softwares are built and the schools are provided with good electricity generating sets, the use of e-learning would be improved.

Recommendations

Based on the conclusion drawn from the findings, the following recommendations are drawn from the findings of the study;

- Government should be proactive in ameliorating the challenges identified in this study and build on the opportunities e-learning offers educational institutions even post covid-19.
- For e-learning to be effective, appropriate measure should be given to maintenances, provision of stable internet provider to support easy

and fast learning and teaching and Electricity is one of the driven force and backbone of computer and computer tools, so Government should finance and connect the rural areas particularly to a stable electric grid.

- Basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers.
- Government should provide educational packages for data usage for educational purpose and softwares be built for subject specifications.

Suggestion for further studies

This study investigated out Factors mitigating the use of E-learning technologies during the Covid-19 pandemic in Egor local government area of Edo state, using 200 respondents. The future researcher may repeat this study by using larger population such as more than one local government.

REFERENCES

Abbad, M. M., Morris, D., & de Nahlik, C. (2009). Looking under the Bonnet: Factors Affecting Student Adoption of E-Learning Systems in Jordan. The International Review of Research in Open and Distance Learning.

Adomi, E.E. & Gbangban, E. (2010). Application of ICTs in Nigerian Secondary Schools. Retrieved from http://www.webpages.uidaho.edu/~mbolin/adomi-kpangban.htm on 10/10/2017

Agyeman, O.T. (2007). ICT Education for Nigeria. Survey of ICT and Education in Africa: Nigeria Country Report: 1-12. Retrieved from https://www.infodevfiles/resource/infodevDocuments 422.pdf on 10/10/2017

Aina, J.K. (2020). Mitigating the impact of COVID-19 on the teaching and learning of science in the Nigerian higher education. International Journal of Innovation and Learning, 4(6); 334-337

Alayi, G.O.(2003). NITDA and ICT in Nigeria. Retrieved from http://ejds.org/

Algahtani, A.F. (2011). Evaluating the Effectiveness of the E-learning Experience in Some Universities in Saudi Arabia from Male Students' Perceptions, Durham theses, Durham University.

Anaekwe, M.C&Anaekwe, G.U. (2020).COVID-19 pandemic and social media: implications for health, science and technology education in Nigeria In E.C. Okigbo, J.N. Okoli, J.O.C. Okekeokosisi & N.N. Samuel (eds). Role of education in the pandemic period in Nigeria. Awka: College of Education Ikwo Printing press Ltd.

Arora, A. (2005). E-learning, Future of Tertiary Education in Nigeria, The Guardian Newspaper 14/5/2015 p. 48.

Bajaj, R.V., & Sharma, V. (2018). Smart Education with artificial intelligence based determination of learning styles. Procedia Computer Science, 132, 834-842.

Colchester, K., Hagras, H., Alghazzawi, D.M., & Aldabbagh, G. (2017). A Survey of Artificial Intelligence Techniques Employed for Adaptive Educational Systems within E-Learning Platforms. Journal of Artificial Intelligence and Soft Computing Research, 7, 47 - 64.

Dublin, L. (2003). If you only look under the street lamps……Or nine e-Learning Myths. The e-Learning developers journal.http://www.eLearningguild.com.

Ewodage, R. (2020). COVID-19: How We Plan To Implement Social Distancing In LagosMarkets, Transport System–Sanwo-Olu. Available online athttps://www.channels tv.com/2020/03/22/covid-19-how-we-plan-toimplement-social-distancing-in-lagos-markets-transport-system-sanwo-olu/.

Eze, S. C., Chinedu-Eze, V. C. & Bello, A. O. (2018). The utilization of e-learning facilities in the educational delivery system of Nigeria: a study of M-University. International Journal of Educational Technology in Higher Education,15(34); 1-20.

Fry, K. (2001). E-learning markets and providers: some issues and prospects. Education Training, 233-239.

Gorder, S. (2008) An E-Learning Primer, Raytheon Interactive. Available from: http://faculty.mercer.edu

Gulbahar C. (2007). Quality, cost and access: the case for redesign. In The Wired Tower. Pittinsky MS (ed.). Prentice-Hall: New Jersey. p. 111–143.

Gulbahar, Y. (2007). E-learning Technology: Promising Method, E-learning International Conference, Saudi Arabia 23-25/3/2003, Riyadh: King Faisal School.

Holmes, B. & Gardner, J. (2006). E-Learning: Concepts and Practice, London: SAGE Publications.

Idowu, A.I & Mary Esere, M. (2013). ICT and higher educational system in Nigeria. Educational Research and Reviews 8(21):2021-202. Doi: 10.5897/ERR09.044

Jones, D. L. (2001). PhD dissertation .student use of a learning management system for group projects: a case study investigating interaction, collaboration, and knowledge construction.

LaRose, R., Gregg, J., & Eastin, M. (1998). Audio graphic tele-courses for the Web: An experiment. Journal of Computer Mediated Communications, 4(2).Federal Republic of Nigeria (FRN) (2004), National Policy on Education, Lagos: NERDC Press.

Li, Y., Wu, S., Yao, Q., & Zhu, Y. (2013). Research on college students'online learning behavior. E Education Research, 34(11), 59–65.

Misko, J, Choi, J, Hong, S & Lee, I 2004, E-learning in Australia and Korea: Learning from practice, Korea Research Institute for Vocational Education and Training, Seoul, NCVER Adelaide.

Nadikattu, R.R., Information Technologies: Rebooting the World Activities during COVID-19 (June 9, 2020). Available at SSRN:

https://ssrn.com/abstract=3622733 or http://dx.doi.org/10.2139/ssrn.3622733

Noor-Ul-Amin, S. (2013). "An effective use of ICT for education and learning by drawing on worldwide knowledge, research and experience: ICT as a change agent for education". Scholarly Journal of Education, vol. 2, no.4, P.p38-54.

Oblinger, D. G., & Hawkins, B. L. (2005). The myth about E-learning. Educause review.

Okebukola, O. (1997). Survey on Implementation of the National Computer Education Curriculum in Selected Primary Schools in Kubwa, Federal Capital Territory, Abuja. Journal of curriculum organization of Nigeria (CON) 13(2) 44-57.

Okebukola, P. (1997). Old, new, and current technology in education. UNESCO Africa 14(15): 7-18.

Pingle, S.S. (2019). Higher educationstudent's readiness for E-Learning. Techno LEARN, 1(1); 155-165.

Richard, H., & Haya, A. (2009). Examining student decision to adopt web 2.0 technologies: theory and empirical tests. Journal of computing in higher education, 21(3), 183-198.

Rogers M. (2003). Students' perceptions on incorporating e-learning into teaching and learning at the University of Ghana international Journal of Education and Development using Information and Communication Technology (IJEDICT), Vol. 8, Issue 1, 91-103.

Rossi.P.G. (2009). Learning environment with artificial intelligence elements. Journal of e-learning and knowledge society, 5(1), 67-75.

Sauer, L.M. (2020). What Is Coronavirus? Available online at https://www.hopkinsm edicine.org/health/conditions-anddiseases/ coronavirus.

Soni, V.D. (2020). Challenges and Solution for Artificial Intelligence in Cyber security of the USA (June 10, 2020). Available at SSRN: https://ssrn.com/abstract=3624487 or http://dx.doi.org/10.2139/ssrn.3624487

UNESCO (2006). Teachers and Educational Quality: Monitoring Global Needs for 2015

UNESCO, (2003), Bulletin on projects in ICT policy, teaching and learning. Paris; UNESCO Press.

Van Break, J., Tondeur, J. & Valcke, M. (2004). Explaining different types of computer use among primary school teachers. European Journal of psychology of Education 19(4): 407-422.

APPENDIX I
QUESTIONNAIRE
DEPARTMENT OF CURRICULUM AND INSTRUCTIONAL TECHNOLOGY (CIT)
FACULTY OF EDUCATION,
UNIVERSITY OF BENIN, BENIN CITY

QUESTIONNAIRE ON FACTORS MITIGATING THE USE OF E-LEARNING TECHNOLOGIES DURING THE COVID-19 PANDEMIC (QFMETP)

Dear Respondents,

This questionnaire is designed for academic purposes. It is structured to find out factors mitigating the use of e-learning technologies during the COVID-19 pandemic in Edo state.

Please respond sincerely to the questions by ticking [√] where applicable. Please note that all responses will be treated in confidence and will be used strictly for academic purposes. Thank you.

Section A: Socio- Demographic information

Gender: Male ( ) Female ( )
Class: JSS1 ( ) JSS2 ( ) JSS3 ( ) SS1 ( ) SS2 ( ) SS3 ( )
School: Public ( ) Private ( )
School type: Boys school ( ) Girls school ( ) Co- educational school ( )

Section B

Please tick (√) where applicable
Keys: SA- Strongly Agree, A- Agree, SD- Strongly Disagree, D- disagree

S/N	ITEMS	Strongly Agree	Agree	Disagree	Strongly Disagree
	What are the challenges of e-learning in Edo state?				
1.	There are no proper orientation on the use of e learning in my school.				
2.	My school does not have enough finance to afford e- learning in my school.				

3.	There is acute shortage of trained personnel in application software in my school				
4.	There are no standard infrastructures to house an ICT laboratory in my school				
5.	Most of my teachers are not computer literate.				
	What are the difficulties in the use of e-learning in the face of covid-19?				
6.	The cost of using e-learning systems is a challenge in my school				
7.	There is no trained personnel to help in the usage of e-learning in my school				
8.	There are no internet facilities in my community				
9.	Software that are appropriate and culturally suitable to the Nigerian education system is in short supply				
10.	There is no regular power supply in my community, hence the use of e-learning in my school is poor.				
	What are the impacts of Covid-19 on e-learning when compared to classroom conventional learning?				
11.	e-learning offers students a wide range of knowledge				
12.	The use of e-learning would foster better understanding of difficult concepts				
13.	In using e-learning systems				

	students gain more by seeing animated effects, colorful presentation and hearing recording				
14.	The use of e-learning develops a strong bonding between students and teacher and				
15.	One of the benefits that comes along with e-learning is that it increases the concentration of students.				
	What are strategies in improving e-learning in secondary schools in Edo state?				
16.	Provision of stable internet provider to support easy and fast learning and teaching				
17.	Regulation and cheap data plans especially for educational purposes				
18.	Basic knowledge on how to operate computer and computer related tools should be given to both the students and teachers				
19.	There should be provision for generator sets.				
20.	Specified educational soft wares should be built for various subjects				

APPENDIX II

RELIABILITY

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables

in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.724	20