COVID 19 AND ONLINE TEACHING IN PRIMARY SCHOOLS NIGERIA

BY

JIMOH GANIYAT BIMPE

18032102047

PRIMARY EDUCATION STUDIES

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CERTIFICATION

This is to certify that this project was carried out by **JIMOH Ganiyat Bimpe** with Matric number **180321047** a student of Primary Education Studies, Tai Solarin College of Education, Omu-Ijebu, Ogun State.

Aderibigbe, Adesoji David
Supervisor

Date

DEDICATION

This project is dedicated to the Almighty Allah who has given me the privileged to complete this course.

Glory be to his name, the Most merciful.

ACKNOWLEDGEMENT

To God be the Glory great things he has done. First and foremost, I give glory, honour and adoration to the Almighty Allah who has made it possible to accomplished this project despite all odds.

I must also acknowledge the unflinching and unwavering support given to me during the writing of this project by my indefatigable project supervisor Mr. Adesoji David ADERIBIGBE. I specially thank him for those useful inputs he made to make this project work possible.

So also as not to be an ingrate I want to accolades to all those involved morally and financially in making my dreams come true "our Elders says that a river does not forget its fountain "Therefore I am grateful to my parent especially my father who is always there for me at all time. Thank you, my Gold

I am also grateful to Mrs Gabriel Grace for her advice and guidance, I do sincerely appreciate my good friends Ejimoh, Modupe and Alade Oyindamola you are all indeed wonderful

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To God and every person. I'm sincerely grateful

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ABSTRACT

This study was carried out on the influence of COVID 19 on the use of online teaching in primary schools. It identifies the type of online teaching application the teachers use before, during and after COVID 19 lockdown. A sample size of 100 respondents was randomly selected. Simple random sampling techniques was used to select the sample. The research design was descriptive survey. Five research questions were formulated and tested using an adopted questionnaire titled "COVID 19 and Online Teaching in Primary Schools in Nigeria Questionnaire" (COTSMQ). The data were analysed using frequency counts and percentage, to answer the research questions. Arising from the foregoing, the research came out with the following findings: the teachers have good knowledge of online teachers (technological) skills before COVID 19. there were improvement in the use of online teaching applications during COVID 19 lockdown and there was a sharp decline in the use of teaching app for online teaching after COVID 19 lockdown.

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CHAPTER ONE

INTRODUCTION

1.1. Background to the Problem

Change is a master teacher. It has a way of compelling human to learn new things, use new method and embrace new technology. The need in the educational system as regard technology in teaching was brought to the fore by the Corona Virus Decease 2019 discovery (COVID 19). It exposed the gap in the technology use in schools most especially at the basic level. The COVID-19 pandemic was declared a national emergency in most of the countries in early 2020. The pandemic forced counties all over the world to adopt a sequence of emergency management mechanisms (Zhang, Wang, Yang, & Wang, 2020). Government of different countries initiated measures such as lockdown of cities, shutting down of educational institutions as well as implementation of strict social distancing measures (Joshi, Factors influencing adoption of online teaching by school teachers: A study during COVID-19 pandemic, 2020).

As in many countries worldwide, as part of the consequences of the COVID-19 pandemic lockdown schools in Nigeria closed in March 2020 and only partially re-opened in July 2020 while some others states in Nigeria like Rivers State re-opened as late as December 2020. Children were sent out of school and were only waiting for when the government will reopen the school. As the waiting linger, schools begin to resolve for alternatives to physical teaching.

During the pandemic period, schools exploit different methods to keep educating the children. Different methods such as homework method, online teaching etc were engaged. Online teaching or virtual teaching involves an application of information and communication technology (ICT) to the teaching process (source). Online teaching is the delivery of instructional content via the use of ICT to students in different location against the face to face physical classroom instruction. In the midst of various challenges pose by

COVID 19 pandemic, this study intends to find out the correlate between COVID 19 and online teaching in primary schools.

1.2. Statement of the Problem

During the COVID 19 pandemic lockdown, different approaches were used by schools to mitigate the effect of the lockdown on learning. Among them were online teaching. Although there has been some clamour for learning out of four wall classroom, the need became more loud during the pandemic. This work study the impact of COVID 19 on the online teaching in primary schools in Nigeria.

1.3. Purpose of the Study

This study purpose to investigate the impact of COVID 19 on the online teaching in primary schools in Nigeria. Curt

The study set the following objectives:

I. To identify the teacher's knowledge of online teaching before COVID 19
II. To find out if the teachers use online teaching platform before COVID 19
III. To ascertain the teachers' ability to use online teaching during COVID 19
IV. To determine if teachers' knowledge of online teaching improved during COVID 19
V. To find out the online platform the teachers use to complement classroom teaching after the pandemic.
VI. To find out if the teachers see need for continuous usage of online teaching after COVID 19 lockdown.

1.4. Research Question

I. Do the teachers have knowledge of online teaching before COVID 19?
II. What online teaching platform do the teachers used before COVID 19?
III. Do the teachers' use of online teaching application improved during COVID 19?

IV. What online platform do teachers use to complement classroom teaching after the pandemic?

V. Do teacher see need for continuous usage of online teaching platform after COVID 19 lockdown?

1.5. Scope and Limitation of the Study

This study focused on the impact of COVID 19 on the implementation of online teaching in primary schools. The study is limited to primary school teachers who are the foundation builder for other educational levels in Nigeria.

1.6. Significance of the Study

The study is significant to educators, schools, teacher educator's, policy makers and independent researchers. The study intends to enlighten and encourage educators on the use of online teaching to facilitate classroom teaching. It will assist the schools to be abreast of the platform used in various school for online teaching to decide on the most appropriate for their school. The teacher educator will be aware of the new trends in online teaching and the need to train teachers to meet such demands. Policy makers will be abreast the trend to make policy in line with the societal change. The study will also assist researchers to be aware of the extent to which the research has been conducted on the subject and other areas to cover. It will also add to the body of knowledge in the field of COVID 19 and online teaching.

1.7. Operational Definition of Terms

COVID 19: COVID-19 is a disease caused by a new strain of coronavirus. It is an acronym, where 'CO' stands for corona, 'VI' for virus, and 'D' for disease and '19' stands for the year it was discovered which is 2019

Lockdown: A state of isolation or restricted access instituted as a safety measure against the COVID 19 outbreak.

Online teaching: Online teaching is the process of educating the pupils on virtual platforms. This type of teaching involves live classes, video conferencing, webinars, and other online tools such as television, radio, WhatsApp and other social medial platform.

Pandemic: A prevalent of decease over a whole country or the world. An outbreak of a pandemic disease such as COVID 19

CHAPTER TWO
REVIEW OF RELEVANT LITERATURE

In this chapter relevant related literature were reviewed under the following headings:

1. The Concept of COVID 19
2. Basic Education
3. Online Teaching
4. Teaching in Primary School
   i. Conceptualising the digital divide
   ii. Digital divide and learning in Nigeria
5. Factors influencing the adoption of online teaching
6. Challenges of online teaching
7. Online teaching after COVID 19
8. Effect of COVID 19 on online teaching and learning
9. Appraisal of Literature

2. 1 Conceptual framework

2. 2.1 The Concept of COVID 19

The coronavirus, also known as COVID-19, which began in China in 2019, was linked to a novel Coronavirus that was named SARS-CoV-2 (Zhu et al., 2020). It is pertinent to note that "the new strain of coronavirus had not been previously identified in humans and the disease associated with it has been dubbed Coronavirus diseases 2019 (COVID-19) by the WHO (Bawazir et al., 2020). The virus has spread to over 155 countries, causing severe morbidity and mortality since its emergence in 2019 (Wu et al., 2020). Coronaviruses are common in certain species of animals, such as cattle camels and bats which can be transmitted to humans. Some health experts believe that the new strain of coronavirus likely originated in bats or pangolins. The first transmission to humans was in Wuhan, China (Agbele & Oyelade, 2020). Since then, the virus has mostly spread through person-to-person contact. The most common way that this virus spreads is through close contact with already infected person. When people with COVID-19 breathe out or cough, they expel tiny droplets that contain the virus. These droplets can enter the mouth or nose of someone without the virus, causing the spread of infection to occur. The disease is most contagious

when a person's symptoms are at their peak though; it is possible for someone without symptoms to spread the virus (Agbele & Oyelade, 2020). Droplets containing the virus can also land on nearby surfaces or objects and when other people touch such surfaces or pick up the objects and then touches their nose, eyes, or mouth the virus spreads.

The first case of COVID-19 was reported in Nigeria by the Federal Ministry of Health on 27th February, 2020. This was the case of an Italian citizen who works in Nigeria and returned from Milan, Italy to Lagos, Nigeria on the 25th of February, 2020 [8]. Since then, the number of confirmed cases of infection keep rising both in Nigeria and across the globe. Nigeria placed a travel ban on 13 countries with high cases of the virus, the countries are; United States, United Kingdom, South Korea, Switzerland, Germany, France, Italy, China, Spain, Netherland, Norway, Japan and Iran. On 11th March 2020, World Health Organization (WHO) declares COVID-19 a pandemic. A pandemic is a disease that has spread across a large region; for instance, multiple continents or worldwide [9].

2.1.2 Concept of Online Teaching

Online teaching can be described as instructional environments that is conducted or supported by the Internet. Online teaching can occur asynchronously (not in real time) or synchronously (online in real time) and may be either fully online, blended with face-to-face teaching or combine elements of campus-based and hybrid forms of instruction. It is an experience that allows for growing, acquiring knowledge, and constructing personal meaning by providing access to learning materials through the Internet; interacting with the learners; and given support to learners during the learning process. These skills and competencies are classified into six categories: (a) pedagogical skills, (b) content skills, (c) design skills, (d) technological skills, (e) management and institutional skills, and (f) social and communication skills (Albrahi, 2020). This research concentrate on the technological skills of teachers. Although online learning relies heavily on technology, there is no imperative need for online instructors to be

technologically advanced. Online instructors have to possess adequate technological literacy skills to be able to do the following:

i. Accessing various technological resources and tools, such as email, Internet browsers, LMSs, text and video chat applications, and productivity software and applications;
ii. Understanding the learning and teaching capabilities and limitations of these tools;
iii. Being aware of the technical potential of, and procedures used to create, e-content, such as e- books and instructional videos; and
iv. Being alert to the latest updates and renovations of educational technology and software. (Albrahi, 2020)

Nigerian government in its effort to curb the spread of the COVI D-19 pandemic declared closure of schools across the country in March 2020. As a result of the lockdown, various measures were put in place to ensure that children continued to learn despite the closure of schools. Among the interventions to ensure continuous learning of children despite the closure of schools were: teaching via various online platforms; using the traditional media, radio and TV to disseminate educational contents; using home-based teaching by parents and caregivers (Oladunjoye, Making online education accessible to all in Nigeria, 2021); and using social media.

While these initiatives were great, some gaps were identified by learners in different categories. With the gaps identified, various Non-Governmental organizations as well as some dedication technology, ed-tech companies provided the needed intervention to ensure that all students regardless of their status, disability or gender continued to learn during the school closure. Five months after the closure, the government has ordered the reopening of schools across the country; however, some states have adopted phased reopening while some are yet to reopen.

The crisis is usually coupled with opportunities and it's time to understand the complete potential of technology for learning within the wake of this medical emergency and keeping the students' safety in mind alongside their academic concern, deferent stakeholders within the education space are endorsing online learning in order that the training only grow and do not recede. Online teaching as a response to pandemics and COVID-19, in particular, actually started in China through their “school's out, class's in” response as an initiative to mitigate the academic loss due to the disease (Zhou, Wu, Zhou, & Li, 2020). For schools in India, April is actually the beginning of new session and as a result, schools feared loss of teaching hours.

Therefore, schools in India followed by the guidelines of state and union government and initiated virtual classes to bridge the gap. Majority of personal schools and other educational institutions initiated mandatory virtual classes, and thus, teachers are unfailingly sharing their lessons over Skype call, Zoom call, Google hangouts, Microsoft teams or the other virtual class options to stay the training on. This was domesticated in other countries like Nigeria although it was faced with many challenges due to poor infrastructure such as internet facilities across country, availability of computers and smartphones for the teaching and learning, interrupted power supply and the lack of online teaching and learning skills from both the teachers and the students.

Teachers face significant challenges in adapting to online teaching, and maintaining at least a minimum of communication with students and supporting students’ learning and development. However, the extent to which teachers have successfully mastered these challenges and which factors are most relevant remain unknown. Heartthrob

2.2 Theoretical Framework

This research adopt the Technological Pedagogical Content Knowledge Framework developed by Mishra and Koehler (2006) developed the Technological Pedagogical Content Knowledge (TPACK) framework depicted in figure 1

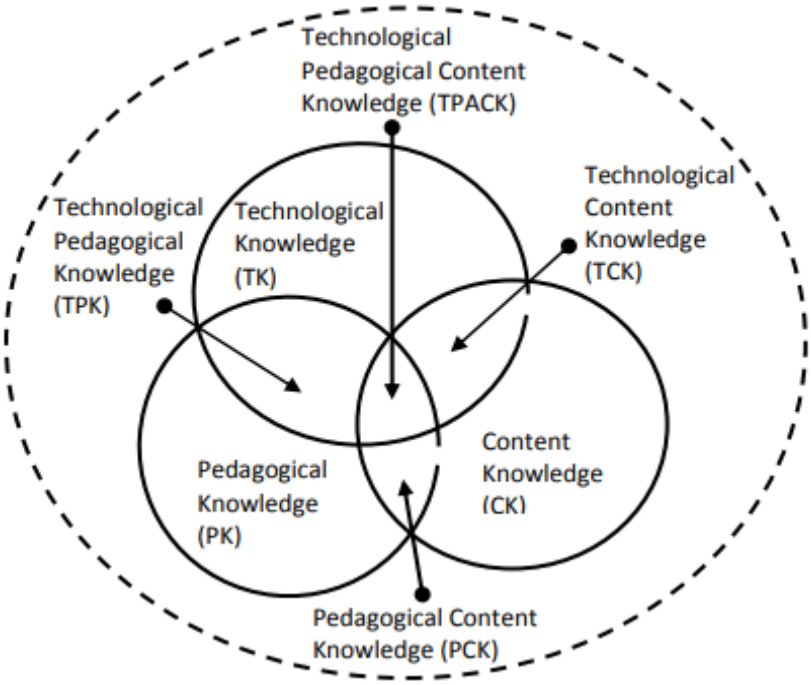

Figure 1: The TPACK framework
Source: Mishra and Kohler (2006) cited in Luhamya, Bakkabulindi and Muyinda (2017), page 32, Figure 6.

According to the TPACK framework (Figure 6), Mishra and Koehler posit that a teacher depends on three domains of knowledge for effective integration of ICT into teaching and learning (IITL). The domains are content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK). Mishra and Kohler (2006) defined CK as knowledge about the actual subject matter that is to be learned or taught. Mishra and Koehler observed that a teacher must know and understand the subject that he/ she teaches, including knowledge of central facts, concepts, theories, and procedures if the teacher is to integrate technology in teaching.

Mishra and Koehler (2006) defined PK as the deep knowledge about the processes or methods of teaching and learning (e.g. values and aims, classroom management, lesson planning, and student evaluation). They argued that a teacher with deep PK is likely to integrate technology in his or her teaching considering how students can best learn in a given classroom context and nature of learners. Mishra and Kohler defined TK as knowledge about standard technologies, such as books, chalkboard, and more advanced technologies such as the Internet and digital video and how to operate those technologies.

They asserted that a teacher with TK has good knowledge of operating system and Pedagogical Content Knowledge (PCK) Content Knowledge (CK) Pedagogical Knowledge (PK) Technological Knowledge (TK) Technological Content Knowledge (TCK) Technological Pedagogical Content Knowledge (TPACK) Technological Pedagogical Knowledge (TPK) computer hardware, the ability to use standard sets of software tools (e.g. word processors, spreadsheets, browsers, e-mail) and how to install and remove peripheral devices, install and remove programmes, create and archive documents among others.

Mishra and Kohler (2006) as Figure 1 suggests, observed that the interaction of these three knowledge domains; CK, PK and TK gives rise to three paired knowledge domains namely pedagogical content knowledge (PCK), technological content knowledge (TCK) and technological pedagogical knowledge (TPK). Mishra and Kohler defined PCK as the knowledge of pedagogy that is applicable to the teaching of specific content such as knowing what teaching approaches fit content, and likewise, knowing how elements of the content can be arranged for better teaching. Mishra and Koehler defined TCK as the knowledge about the manner in which technology and content are reciprocally related. They further asserted that a teacher needs to know not just the subject matter he/she teaches but also the manner in which the subject matter can be changed by the application of technology. Mishra and Kohler (2006) defined TPK as knowledge of the existence, components and capabilities of various technologies as they

are used in teaching and learning settings and conversely, knowing how teaching might change as the result of using particular technology.

According to Figure 1, TPACK is the intersection of all the three bodies of knowledge (CK, PK & TK). The development of TPACK by teachers is central for effective teaching with technology because understanding TPACK is above and beyond understanding technology, content, or pedagogy in isolation, but rather how these forms of knowledge interact with each other.

The theory is applicable to online teaching because teacher needs to understand and apply content knowledge, pedagogical knowledge and technology knowledge for effective online teaching to take place. Although many teachers may have content knowledge and pedagogical knowledge before COVID 19 lockdown their technological knowledge was inadequate in some cases. Some that even have the three bodies of knowledge (CK, PK & TK) find it difficult to develop Technological Pedagogical Content Knowledge (TPACK) for effective teaching.

2.3 COVID 19 and Online Teaching

The COVID-19 pandemic was declared a national emergency in most of the countries in early 2020. The pandemic forced counties all over the world to adopt a sequence of emergency management mechanisms (Zhang, Wang, Yang, & Wang, 2020). As in many countries worldwide, as part of the consequences of the COVID-19 pandemic lockdown schools in Nigeria.

As a result of the lingering pandemic, schools began to source for alternatives ways to teach the students remotely. Schools exploit different methods to keep educating the children. Different methods such as homework method, online teaching etc were engaged. Among these methods, online teaching seems to be more sustainable. Although there has been some clamour for learning out of four wall classroom, the need

became more loud during the pandemic. Many factors influence the adoption of online teaching. They are discussed below.

2.3.1 Factors influencing the adoption of online teaching

Despite the increasing emergence of edtech startups offering digital learning models, the delivery of education in Nigeria has mainly been through in-person learning taking place in classrooms with very little embrace of digital options by schools. Indeed, even private after-school lessons at home typically involve in-person sessions with a tutor despite the growing abundance of online options and resources (Kazeem, 2021).

Before COVID 19 lockdown, online teaching was adopted basically for three main reasons

a. to provides global access to learning remotely
b. to deliver knowledge at a cost-effective rate
c. to provide access to reasonably significant audiences in need of knowledge (Sharma & Sankari, 2015)

However, during COVID 19, the factors change from consideration to necessity. The need to keep the student engage with learning was major influencer in to the adoption of online teaching during COVID 19. The pandemic motivated the academic institutions and schools to go online. Teachers as well as students are exposed to new platforms such as Microsoft teams, Google hangouts, Zoom (Sangeeta, & Tandon, 2020), Google classroom, Edumoodle etc. Social media platform such as WhatsApp and Facebook were also explored. In order to conduct classes smoothly, proper protocols and directions were given to the students as well as parents to facilitate adaptation to this novel channel of learning (Saxena, 2020).

2.3.2 Online teaching and digital divide in Nigeria

The term digital divide refers to the inequalities in access to and use of new media technologies between the so-called information "haves" and "have nots" (DiMaggio & Hargittai , 2021). Digital divide offers a useful contribution to understanding the relationship between Internet access and social inequality. However, the term digital divide now broadly refers to a body of literature that explores the inequalities in internet access, including its uses and effects (Büchi, 2017).

In the wake of the COVID-19 pandemic, educational systems transitioned into new methods of learning aided by the internet but children in rural and underserved communities in Nigeria were mainly left out of this digital transition Amorighoye (2020). Findings from the TEP Centre (2020) study revealed that a sizeable proportion (28%) of teachers reported that their students were not actively learning during the pandemic as a result of inaccessibility of digital tools for learning. According to the International Telecommunication Union (2019a), internet penetration in Nigeria stands at 42%, implying that more than half of the population were not connected to the Internet, and even fewer if the consideration of multiple device use by Nigerians is factored in. On the other hand, mobile adoption in Nigeria shows great potential which can also be harnessed for learning (International Telecommunication Union (ITU), 2019b).

In Nigeria, majority of the population with internet access are from richer socioeconomic and urban households who can afford private school education, thereby giving their children a learning advantage over their public-school counterparts (Obiakor & Adeniran, 2020). Children from poorer socioeconomic backgrounds tend to have limited access to internet connectivity, computers, mobile phones, functional ICT skills and active parental support. Moreover, they dwell in rural areas where local languages are dominant and could limit the uptake of ICT-learning. The inequity in access to ICT-based learning has the adverse effect of further intensifying the existing disparities in learning outcomes along socioeconomic and geographic (urban-rural) lines (Azubuike, Adegboye, & Quadri, 2020)

Studies from other African countries corroborate these existing divides. In South Africa, students in private or high-fee paying institutions were more proficient in the use of ICT in their learning than their counterparts in public institutions (Gudmundsdottir, 2010). A study by EdQual on the use of ICTs in Rwandan schools, showed how ICT policy initiatives could tend to exclude those in rural areas. Urban schools had more computers, internet, electricity supply and ICT equipment (Rubagiza, Were and Sutherland, in (Azubuike, Adegboye, & Quadri, 2020). Chair and De Lannoy's (2018) study of Nigeria, Tanzania and Rwanda showed that young people especially in rural areas, were deprived of internet resources due to low-level of education, low income and lack of digital skills. As the pandemic led many children across the world and in Nigeria to learn at home, it is important to understand how children accessed learning remotely and the support and provisions that were available for them to learn effectively.

2.3.3 Challenges of online teaching

Noticeable challenges for online teaching is online skills, facilities, convincing parent and learners to join the online classes, poor network and power outage and economic crisis.

a. **Online skills:**
   One lesson quickly learned in the process of adapting to new realities was not to take parents' internet savvy for granted. "Not all the parents are tech savvy so they struggle with accessing the online platform for their children. Some parents couldn't even log in (Kazeem, 2021).

b. **Facilities:**
   In Nigeria most children in government school came from poor homes that there parent could not afford to buy smart phone or computer for online teaching. Such were left with their faith to learn through government provision of Television and radio which is one-way communication. However, some government schools too adopted online teaching methods to provide the

interactivity that one-way radio transmissions do not provide. In fact, a teacher at a government-owned high school tells Quartz Africa that classes were delivered to students through WhatsApp and Telegram groups. And, in cases where students do not own personal phones, they are expected to sign up with their parents' devices or even team up with neighbors who have access. So far, no research as shown the level of students participated and how the students' feedback was conducted during this period.

c. **Convincing parent and learners to join the online classes:**
The pandemic also put extra strain on parent who did not planned for homeschooling. They have to be hands-on while possibly working from home themselves. Such task most parent are to. Some need to share their devices such as phone and laptop with their children. The learners have to get use to the online base learning which they find boring as against face to face teaching.

d. **Poor network and power outage**
While internet costs and access are unlikely to prove a barrier among middle-class households that can afford high-end private schools or sign-up with edtech startups, the quality of access remains in question. With a mean download speed of 1.56 megabits per second (Mbps), Nigeria is rooted in the bottom quarter of global broadband speed rankings for 2019 by UK analytics firm Cable. The slow speeds and short attention spans of young students present a problematic combination that could undermine learning (Kazeem, 2021).

e. **Economic crisis**

2.4 Learning Management Systems In Nigeria

During the pandemic most schools in Nigeria have transitioned to online learning platforms because it is convenient, makes them efficient, and is easy to manage.

There are apps, software and IT solutions all around us now, that make the task of learning and even running a school more efficient. The online learning platforms designed to provide IT solutions and e-learning capabilities in our schools are built with creativity and to fit just right with the Nigerian education ecosystem.

i. EDUFIRST.NG

Edufirst.ng is an educational organization that provides IT solutions for schools. It is a subsidiary of Skool Media, also a private organization. Edufirst offers several online courses in many subjects. It was one of the e-learning platforms used by the Federal Government for secondary school students during the COVID-19 pandemic. The e-learning program garnered more than 20,000 subscribers in the first few months.

Part of the IT solutions they provide for schools includes building computer labs, and overseeing the training of staff on the use of the facilities and the latest educational technologies. So far, Skool Media has successfully installed more than a dozen computer labs across Nigeria and has trained more than 100 staff members from unity schools.

ii. FLEXISAF

Flexisaf is a very powerful Learning Management System (LMS), it allows administrators to manage their school activities and store student and teacher data in the cloud. Flexisaf provides an interesting range of services for its clients.

This e-learning platform has lots of features, it is great for managing an entire school from one dashboard. They provide e-learning solutions for primary schools, secondary schools, tertiary education, and even the Government, and have created many applications that cater to the needs of education in Nigeria.

One of their most prominent developments was the SRMS, it is a student record's dashboard, and it allows you to collect school fees and other payments online. Students just login to the school website and pay upfront. Most Nigerian universities are currently using this service on their website.

Their e-learning platform is one of the best in the country, on the homepage of their website, it says "Our solutions are guaranteed to save you time, reduce expenses and boost efficiency", and they are sticking to that mantra. Their innovation has led to the development of education in Nigeria, the website also fittingly says "We are on a mission to take education in Nigeria where no one has gone before".

iii. GOPIUS

Gopius is an online LMS that is suitable for primary, secondary and tertiary schools. It provides administrators with tools to help them run their school efficiently. You can track reports using Gopius, create digital content for learning, and everything is cloud-based. Multimedia tools such as videos, images and audio can be used to create the digital content. Also, one of its main marketable features is that you can design and customize the look and feel of it. So, Gopius will go nicely with whatever theme you have in place on your website.

iv. SUPERPROF.NG

Superprof is more of a digital yellow page for tutors than it is an actual e-learning platform. They have thousands of tutors listed in their database from each state in Nigeria.

You can find private tutors for your child here, and you can find tutors on any subject or skill. There are maths tutors, English language tutors, chemistry tutors, physics tutors, accounting tutors, music tutors, etc. If you want, you can choose the private tutors according to their level of expertise, do you need a primary school tutor or a secondary school tutor?

You can also use Superprof to find tutors who offer lessons online via webcam. They will teach you or your child via Skype, Google Meet or any other similar video conferencing platform, all you need is a good webcam and reliable internet connection.

v. Thinglink – Tools to create interactive images, videos and other multimedia resources.

vi. Buncee – Supports the creation and sharing visual representations of learning content, including media-rich lessons, reports, newsletters and presentations.

vii. EdPuzzle – Video lesson creation software.

viii. EduCaixa - Courses in Spanish language to help teachers develop the skills and competencies of learners in areas such as communication, entrepreneurship, STEM and big data.

ix. Kaltura – Video management and creation tools with integration options for various learning management systems.

x. Nearpod – Software to create lessons with informative and interactive assessment activities.

xi. Pear Deck – Facilitates the design of engaging instructional content with various integration features.

xii. Squigl – Content creation platform that transforms speech or text into animated videos.

xiii. Trello - A visual collaboration tool used by teachers and professors for easier coursework planning, faculty collaboration, and classroom organization.

2.5 Online Teaching After COVID 19

In deed COVID 19 pandemic has increase the usage of online teaching and e-learning. During COVID-19 pandemic, teachers facilitate and implementing online teaching-learning strategies in school. Various teaching methods like e-learning mode of instructions were adopted by teachers and emerged with several new teaching strategies like interactive learning, collective and responsive learning and it keeps going on in the future also. In this difficult time, many new helpful educational methodologies are illustrated that emerged with several instructional activities (Panwar & Agrawal, 2020). Although the online teaching was faced with different challenges, it was best alternative means of educating learners during the pandemic. This study research into the state of online teaching after the COVID 19 lockdown in Nigeria, but to the best knowledge of the researcher, no research has been conducted in this area. This research report will fill that gap.

2.6 Effect of COVID 19 on Online Teaching and Learning

For as long as the first wave of COVID 19 pandemic lasted, the damage it does to educational system has not been fully fathomed. During the period, many counties paced a lockdown order on the citizen save those on essential duties such as health workers and security personnel. Schools short-down affected learning as many schools could no longer operate while other do skeletal works. The most affected schools during this period were the rural schools who could not afford the technological gadget for the online teaching and learning. Between April and August 2020, Human Rights Watch conducted 57 remote

interviews with students, parents, teachers, and education officials across Burkina Faso, Cameroon, the Democratic Republic of Congo, Kenya, Madagascar, Morocco, Nigeria, South Africa, and Zambia to learn about the effects of the pandemic on children's education. The research shows that school closures caused by the pandemic exacerbated previously existing inequalities and those children who were already most at risk of being excluded from a quality education have been most affected.

During the period of COVID 19, schools were confronted with the need to adapt to online teaching. Consequently, teachers face significant challenges in adapting to online teaching, and maintaining at least a minimum of communication with students and supporting students' learning and development. The efforts were not generally successful due to the differences in the degree of teacher's ICT skills. Teachers' ICT skill is crucial to the process and outcome of integrating information technology (IT) in learning and online teaching in schools. However, the extents to which teachers have successfully mastered these challenges and which factors are most relevant are still unknown. Although several conferences and workshops were floated to teach various ICT skills for teaching, they were organized online and those teachers that have low ICT skills could not even benefit from it.

In a report on the need for digital literacy by the Human Rights Watch, Digital literacy for students and teachers was recognized as an indispensable element of children's right to education. The report shows that many teachers who tried to use the technology for teaching could not use it as a result of requisite training they had not acquired before the sudden COVID 19 pandemic. Indeed it met many schools unprepared (Human Rights Watch, 2020).

Emi Harry, founder of Naina Tech, a tech company building a cloud-based learning platform driven by artificial intelligence for early childhood education, opines that there is a need for the restructuring of the education sector. She opined that educational structures need to be rethink based on the emergence of the COVID-19 pandemic and its side effects, Although schools has been reopened, education can never return

to what it used to be before the pandemic (Oladunjoye, Making online education accessible to all in Ngeria, 2020).

With the disruption to education caused by the COVID-19 pandemic and the subsequent adoption of remote learning across Nigeria, learners from financially privileged households represent the demographic that have more access to quality learning opportunities from the comfort of their homes (TEP Centre, 2020). As with inequality of access to traditional learning resources, the main correlates of this inequality of access to quality remote learning include demand-side factors such as limited or non-availability of digital devices and internet services in most homes and supply-side issues that include the lack of financial and technical capacity (Azubuike, Adegboye, & Quadri, 2020)

It is impossible for the Nigerian government to solve the issues of education independent of the private sector, in the same way that the solutions being proffered by the private sector will have limited success without successful partnership with the government. Presently, only private schools in Nigeria have proper systems in place. Most public schools are ill-equipped, each child lacks a personal computer, electricity still remains a challenge, and the digital divide is even more glaring. A lot of schools implemented hybrid structures where students learn online at home 3 out of 5 days, and the other 2 days in the classroom. (Oladunjoye, Making online education accessible to all in Ngeria, 2020).

All this can be mitigated by a proper partnership between the private sector and the government, where the government lets go of excessive bureaucracy and the private sector adopts the social entrepreneurial mindset in their approach to business where instead of only focusing on profit, they are instead guided by the principles of people, profit and planet.

2.7 Appraisal of Literature

Adoption of online teaching, though laudable during this COVID-19 time, but it is also important to develop and enhance the quality of teaching and courses delivered during pandemic. An operative,

competent, and resourceful educational system is mandatory to deliver online delivery of classes. There are numbers of technological issues like downloading issues, installing apps, low internet-speed, issues related login ids, inaudible voice, video and so on. Even learners also and e-teaching boring and less interactive.

CHAPTER THREE
RESEARCH METHODS AND PROCEDURES

This chapter discusses the methods and procedures to be used for this study under the following sub-headings:

i. Research Design
ii. Population of the Study
iii. Sample and Sampling Technique
iv. Research Instrument
v. Validity of the Research Instrument
vi. Reliability of the Research Instrument
vii. Method of Data Collection
viii. Method of Data Analysis

3. 1 Research Design

This study adopts descriptive survey design which is defined as an attempt to collect detailed facts that describe existing phenomena (Osuala in (Aderibigbe , 2019)). Descriptive survey is considered suitable for this study because the researcher did not manipulate any of the variables of the study (that is search skills and usage of online information resources); hence it is based on the views and opinions of respondents.

3. 2 Population

The population of the study are primary school teachers in Ogun state.

3. 3 Sample Size

The sample size for this study is 100 respondents from the primary teachers in Ogun State, Nigeria. Hence, the study adopts a sample size of 100 students out of the population because the population is large

Purposive random sampling techniques were adopted for this research. Purposive random sampling was considered most appropriate because the researchers intend to administers the instrument online as well as some schools in her study area.

3. 4 Research Design

The instrument for data collection in this research is the questionnaire. The questionnaire is titled "COVID 19 and Online Teaching in Primary Schools Questionnaire" (OTPSQ). The instrument was divided into seven sections (A to G). Section A examined demographic information of the respondents. Section B investigated the teacher's knowledge of online teaching before COVID 19. Section C inquired the teacher's use of online teaching platform before COVID 19. Section D questioned the teachers' ability to use online teaching during COVID 19. Section E investigated the improvement of teachers' knowledge of online teaching during COVID 19. The type of online platform the teacher's use to complement classroom teaching after the pandemic were captured with items in Section F while Section G inquired if the teacher sees the need for continuous usage of online teaching after COVID 19.

3.5 Validity of the Research Instrument

Content and face validity was done by subjecting the instrument to the input of research experts in the Department of Primary Education, School of Education, Tai Solarin College of Education, Omu-Ijebu

before submitting it for the scrutiny of the researcher's supervisor. The questionnaire items were critically looked into to ascertain their ability to answer the research questions and hypotheses stated by this research. Corrections and suggestions were dully considered before final copy of the instrument was produced.

3.6 Reliability of the Research Instrument

The reliability of the instrument was carried out with the use of Cronbach's Alpha Reliability Co-efficient. Internal consistency reliability method was adopted. It measures how consistently participants respond to one set of items. This requires only one sample of data to estimate the internal consistency reliability (Saura, 2015). The sample instrument was administered on 40 LIS students out of the area of the study (in the Department of Library and Information Science, Faculty of Education, Delta State University, Abraka). Divide half technique was used to determine the reliability of the instrument by dividing the questionnaire into first 20 half and second 20 half. The Cronbach's Alpha reliability co-efficient statistical tool was used to ascertain the internal consistency of the items in the questionnaire. The internal consistency of the instrument was found to be 0.84 which is an indication that the instrument is good and therefore reliable. This interpretation was in line with the submission of George and Mallery (2003) who asserted that a reliability coefficient of 0.9 or > 0.9 is excellent, > 0.8 is good, > 0.7 is acceptable, > 0.6 is questionable, > 0.5 is poor, and < 0.5 is unacceptable.

3.6 Method of Data Collection

The instrument was self-administered by the researcher with the help of two research assistants. They were adequately trained on how to administer the instrument. The respondents were given the questionnaire to fill it as it applies to them. The researcher and his assistants offered additional information and clarity where needed and gathered the questionnaire back from the respondents in a period of about five weeks

3.7 Method of Data Analysis

The data obtained from research instrument were analysed using descriptive and inferential statistical tools. Information pertaining to the bio data of the respondents and research questions one, five and six were analysed using frequency counts and percentages (descriptive statistics). The frequency count will help to know the actual number of respondents that favours a particular item and the percentage will help put the description in a more presentable rounded figure of hundred.

Research questions two, three, and four were analyzed with the use of mean. Mean was used to find average of the responses of the respondents, thereby making it possible to categorize participants' responses into low and high skills.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter is devoted to the analysis of data, presentation of results and discussion of the findings. It is divided into five sections which are as follows:

i. Questionnaire response rate
ii. Analysis of bio-data of the respondents
iii. Answering of the research questions
iv. Testing of the hypotheses
v. Discussion of the findings

4. 1 Questionnaire Response Rate

Data pertaining to the questionnaire response rate are presented and discussed under this section.

Table 1: Percentage Rate of Retrieved Response of Questionnaire

Number of Copies of Questionnaire Administered	Number of Copies of Useful Questionnaire Retrieved	Percentage of Copies of Useful Questionnaire Retrieved
100	100	100%

Table 1 reveals the questionnaire response rate. It shows that a total number of 100 copies of the questionnaire were distributed to the respondents and100 (100%) were retrieved and found to be useful. This research considered 93% response rate to be adequate because the acceptable response rate for most studies is 60% and above (Dulle, Munish-majanja & Cloete, 2010).

4. 2 Analysis of Demographic Data of the Respondents

This section shows the bio-data of the respondents for this research. Frequency counts and percentages (descriptive statistics) were used to analyse the bio data of the respondents as presented in Tables 2 to 5.

Table 2: Gender of the Respondents

Gender	Frequency (F)	Percent (%)
Male	35	35
Female	65	65
Total	100	

Table 3: Age of the Respondents

Age group	Frequency	Percent
25 and below	3	3
26-30	0	0
31-35	32	32
36-40	3	3
41-45	59	59
46-50	3	3
51 and above	0	0
Total	100	100%

Table 4: Educational Level of the Respondents

Gender	Frequency	Percent
Undergraduate	26	26
Graduate	74	74
Others	0	0
Total	100	100%

Table 5: Designation of the Respondents

Gender	Frequency	Percent
Class teacher	90	90
Subject teacher	10	10
Total	100	

4.2 Analysis of Demographic Data of the Respondents

Research Question One: Do the teachers have knowledge of online teaching skills before COVID 19?

This section discloses the teacher's knowledge of online teaching skills before COVID 19

Table 6: The teacher's knowledge of online teaching (technology) skills before COVID 19

SN	Online Teaching Skills	Yes		No	
		F	%	F	%
1	Use mouse and keyboard effectively on computer	97	97	3	3
2	Type document on my phone	90	90	10	10
3	Retrieve information from a storage device such as flash drive, memory card and disk.	87	87	13	13
4	Convert information from one format to another (e.g. word to pdf).	83	83	17	17
5	Copy and paste from webpage or app to another app on my phone.	89	89	11	11
6	Browse for online information materials through phone and computer	93	93	7	7
7	Record video/audio, edit it and send it online	91	91	9	9
8	Use power point to present a lesson.	80	80	20	20

Table 6 shows that the respondents have online teaching skills to use mouse (97%), browse (93%), record video (91%), type document (90%), copy and paste (89%), retrieve information from storage drive (87%), convert information (83%) and use power point (80%) before COVID 19

Research Question Two: What online teaching platform do the teachers used before COVID 19?

Table 7: The applications used for online teaching before COVID 19 Pandemic

SN	Online teaching application	F	%
1	Self-developed Application by my school	74	74
2	Google meet	66	66
3	Zoom	17	17
4	Edmodo	1	1
5	Google classroom	53	53
6	Edufirst.ng	24	24
7	Flexisaf	2	2
8	Gopius	3	3

9	Superprof.ng	3	3
10	Thinglink	5	5
11	Buncee	3	3
12	EdPuzzle	2	2
13	EduCaixa	1	1
14	Kaltura		
15	Nearpod	5	5
16	Pear Deck	2	2
17	Squigl		
18	Youtube	31	31
19	Facebook	27	27
20	WhatsApp	38	38
21	Others (please Mention)	2	2

Table 7 shows the respondents mostly used self-developed application (74%), Google meet (66%) Google Classroom (53%) before COVID 19 for online teaching

Research Question Three: Do the teachers' use of online teaching application improved during COVID 19?

Table 8: Teachers' use of online teaching application during COVID 19?

SN	**Online teaching application**	**F**	**%**
1	Self-developed Application by my school	74	74
2	Google meet	58	58
3	Zoom	30	30
4	Edmodo	1	1
5	Google classroom	85	85
6	Edufirst.ng	56	56
7	Flexisaf	3	3
8	Gopius	3	3
9	Superprof.ng	3	3
10	Thinglink	5	5
11	Buncee	4	4
12	EdPuzzle	3	3

13	EduCaixa	2	2
14	Kaltura	1	1
15	Nearpod	4	4
16	Pear Deck	1	1
17	Squigl	2	2
18	Youtube	35	35
19	Facebook	30	30
20	WhatsApp	53	53
21	Others (please Mention)		

Table 8 shows the respondents mostly used Google Classroom (85%) self-developed application (74%), Google meet (58%), Edufirst,ng (56%) , and Whatsapp (53%) during COVID 19 for online teaching. This shows that there are improvement on the use of online teaching application during COVID 19 Lockdown

Research Question Four: What online platform do teachers use to complement classroom teaching after the lockdown?

Table 9: Teachers' use of online teaching application after COVID 19 lockdown?

SN	Online teaching application	F	%
1	Self-developed Application by my school	74	74
2	Google meet	38	38
3	Zoom	19	19
4	Edmodo	1	1
5	Google classroom	62	62
6	Edufirst.ng	39	39
7	Flexisaf	2	2
8	Gopius	4	4
9	Superprof.ng	1	1
10	Thinglink	3	3
11	Buncee	5	5
12	EdPuzzle	3	3
13	EduCaixa	2	2
14	Kaltura		
15	Nearpod	4	4
16	Pear Deck	2	2
17	Squigl	2	2
18	Youtube	24	24
19	Facebook	30	39
20	WhatsApp	31	31
21	Others (please Mention)		

Table 9 shows the respondents mostly used self-developed application (74%), Google Classroom (62%) after COVID 19 lockdown for online teaching. This shows a shard decline in the use of online teaching application

Research Question Five: Do teacher see need for continuous usage of online teaching platform after COVID 19 lockdown?

Table 10: Teacher perception for continuous usage of online teaching platform after COVID 19 lockdown

SN	ITEM	SA	A	D	SD
1	Online teaching platform is necessary for sustainable development	32	66	1	1
2	Online teaching is the solution for need for global access to learning	27	58	11	4
3	Online teaching is cost-effective and time efficient and it should be encouraged	49	41	8	2
4	Online teaching gives room for more audience in need of knowledge	35	53	8	4
5	Online teaching gives room for multiple access at the same time	38	49	11	12

Table 9 shows the respondents mostly agreed that there should be continuous usage of online teaching platform after COVID 19 lockdown. That online teaching is necessary for sustainable development goal, cost effective, give room for more audience, give global access, and can be access my multiple users at the same time.

4.3 Discussion of findings

The finding shows that the teachers have good knowledge of online teachers (technological) skills before COVID 19. This is in line with a research conducted by Albrahi (2020) on online teaching skills and competencies which shows that teachers have technological skills for online teaching.

Although there was drop in the use of google meet application for online teaching during COVID 19 lockdown, there was an improvement in the use of Google Classroom and WhatsApp

The result of findings shows that there is a sharp decline in the use of teaching app for online teaching after COVID 19 lockdown. Only self-developed app and google classroom were been used after the lockdown. This is not far fetch from the fact that teaching have shifted back to classroom and teachers.

Most of the respondents agreed that the teachers should continue to use online teaching after lockdown to complement the classroom teaching

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the findings, conclusion, recommendations of the study entitled "COVID 19 and online teaching in schools in Nigeria".

5. 1 Summary of the Study

This study investigates COVID 19 and online teaching in schools in Nigeria. The population for the study were teaching staff from primary secondary and tertiary institutions in Odogbolu Local Government Area. A sample size of 100 respondents was randomly selected. Simple random sampling techniques was used to select the sample. The research design was descriptive survey.

Five research questions were formulated and tested using an adopted questionnaire titled "COVID 19 and Online Teaching in Primary Schools in schools in Nigeria Questionnaire" (COTSMQ) The data were analysed using frequency counts and percentage, to answer the research questions. Arising from the foregoing, the research came out with the following findings:

1. The teachers have good knowledge of online teachers (technological) skills before COVID 19. This is in line with a research conducted by Albrahi (2020) on online teaching skills and competencies which shows that teachers have technological skills for online teaching.

2. Although there was drop in the use of google meet application for online teaching during COVID 19 lockdown, there was an improvement in the use of Google Classroom and WhatsApp
3. There is a sharp decline in the use of teaching app for online teaching after COVID 19 lockdown. Only self-developed app and google classroom were being used after the lockdown. This is not far fetch from the fact that teaching have shifted back to classroom and teachers.

5. 2 Conclusion

The research concludes that the teachers have knowledge of online teaching skills before COVID 19 Lockdown. During the Lockdown, there were increase in the use of online teaching platform. And after the lockdown there was a sharp decline in the use of online teaching app for teaching or facilitation the classroom teaching. More so the teachers believed that the use of online teaching should be continued

5. 3 Recommendations

On the basis of this study, some recommendations are drawn as follows:

1. More training should be given to teachers on the use of varieties on online teaching applications to enhance their teaching.
2. Since we cannot control emergencies, preparation should be made for such occurrences should in case they happened by leveraging on the use of technology in teaching and learning. Hence, deliberate effort should be made by all stakeholders of education to combine online teaching with traditional classroom teaching.

3. The world has gone digital, hence any teacher that want to be relevant in the 21st century must work on acquiring online teaching skills that will make him/her stand out and compete with their counterpart across the world.

5.4 Contribution to Knowledge

The study contributes to the knowledge in the following ways:

1. The study established that teachers have knowledge of some online teaching application that can facilitate learning.
2. The study has shown that most teachers may not put the skills to use except there is a deliberate policy to use it. Hence the reason for the sharp decline in the use of online teaching app after the lockdown.

5.5 Suggestion for Further Studies

Based on the claims of the respondents' view that online teaching should continue even after COVID 19 lockdown but they did not use it. An investigation should be conducted on why they are not using it. Could it be because of the economic challenge, lack of proper training?

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APPENDIX I: QUESTIONNAIRE

Department of Primary Education,
Tai Solarin College of Education, Omu-Ijebu
3rd April, 2021

Dear Respondent,

COVID 19 AND ONLINE TEACHING IN PRIMARY SCHOOLS QUESTIONNAIRE (COTPSQ)

I am a NCE student of the above named institution. I am conduction a research on COVID 19 and online teaching in primary schools' questionnaire (COTPSQ). Please complete the questionnaire by ticking the options that best represent your opinions to the following statements or questions. Your kind and honest response will be treated with strict confidentiality as it is meant for academic purpose only.

Thank you for your cooperation.

Yours faithfully,

Jimoh Ganiyat Bimpe

Instruction
Please read the questionnaire carefully and tick (√) the option that best suit your response.

SECTION A:
Demographic Data
Gender: Male ☐ Female ☐
Age: 25 and below ☐ 26-30, ☐ 31-35, ☐ 36-40, ☐ 41-45, ☐
46-50, ☐ 51 and above ☐
Education: Graduate, ☐ Undergraduate, ☐ Others (please Specify …….
Designation Class teacher, ☐ Subject teacher ☐

SECTION B: The teacher's knowledge of online teaching before COVID 19

Before COVID 19, I can do the following

SN	Online Teaching Skills	Yes	No
1	Use mouse and keyboard effectively on computer		
2	Type document on my phone		
3	Retrieve information from a storage device such as flash drive, memory card and disk.		
4	Convert information from one format to another (e.g. word to pdf).		
5	Copy and paste from webpage or app to another app on my phone.		
SN	**Online Teaching Skills**	**Yes**	**No**
6	Browse for online information materials through phone and computer		
7	Record video/audio, edit it and send it online		
8	Use power point to present a lesson.		

SECTION C: Use of Applications for Online Teaching before COVID 19

Which of this applications have you use for online teaching before COVID 19 Pandemic? Tick all those you have used.

SN	Information Search Skills	Tick
1	Self-developed Application by my school	
2	Google meet	
3	Zoom	
4	Edmodo	
5	Google classroom	
6	Edufirst.ng	
7	Flexisaf	
8	Gopius	
9	Superprof.ng	
10	Thinglink	

SN	Information Search Skills	Tick
11	Buncee	
12	EdPuzzle	
13	EduCaixa	
14	Kaltura	
15	Nearpod	
16	Pear Deck	
17	Squigl	
18	Youtube	
19	Facebook	
20	WhatsApp	
21	Others (please Mention)	

SECTION D: Use of Applications for Online Teaching during COVID 19

Which of this applications did you use for online teaching during COVID 19 lockdown? Tick all those you used.

SN	Information Search Skills	Tick
1	Self-developed Application by my school	
2	Google meet	
3	Zoom	
4	Edmodo	
5	Google classroom	
6	Edufirst.ng	
7	Flexisaf	
8	Gopius	
9	Superprof.ng	
10	Thinglink	
SN	**Information Search Skills**	**Tick**
11	Buncee	
12	EdPuzzle	
13	EduCaixa	
14	Kaltura	
15	Nearpod	
16	Pear Deck	

SN	Information Search Skills	Tick
17	Squigl	
18	Youtube	
19	Facebook	
20	WhatsApp	
21	Others (please Mention)	

SECTION E: Use of Applications for Online Teaching during COVID 19

What online applications did you use to complement teaching after the lockdown? Tick all those you used.

SN	Information Search Skills	Tick
1	Self-developed Application by my school	
2	Google meet	
3	Zoom	
4	Edmodo	
5	Google classroom	
6	Edufirst.ng	
7	Flexisaf	
8	Gopius	
9	Superprof.ng	
10	Thinglink	

SN	Information Search Skills	Tick
11	Buncee	
12	EdPuzzle	
13	EduCaixa	
14	Kaltura	
15	Nearpod	
16	Pear Deck	
17	Squigl	
18	Youtube	
19	Facebook	
20	WhatsApp	
21	Others (please Mention)	

SECTION F: Need for continuous usage of online teaching platform after COVID 19 lockdown?

Do you see need for continuous usage of online teaching platform after COVID 19 lockdown?

SN	ITEM	SA	A	D	SD
1	Online teaching platform is necessary for sustainable development				
2	Online teaching is the solution for need for global access to learning				
3	Online teaching is cost-effective and time efficient and it should be encouraged				
4	Online teaching gives room for more audience in need of knowledge				
5	Online teaching gives room for multiple access at the same time				