

**IMPACT OF ONLINE TEACHING ON TEACHING AND  
LEARNING ACTIVITIES IN SECODARY SCHOOLS DURING  
COVID-19 PANDEMIC.**

**(A CASE STUDY OF SELECTED PRIVATE SECODARY SCHOOLS  
IN IJEBU-ODE, LOCAL GOVERNMENT AREA, OGUN STATE )**

**BY**

**OLANIYAN TAWAKALIT OLUWABUKOLAMI  
17012102083  
PRIMARY EDUCATION**

**A PROJECT SUBMITTED TO THE DEPARTMENT OF PRIMARY  
EDUCATION, TAI SOLARIN COLLEGE OF EDUCATION, OMU –  
IJEBU, OGUN STATE, NIGERIA**

**IN PARTIAL FULFILMENT FOR THE REQUIREMENT OF  
NIGERIA CERTIFICATE IN EDUCATION (N.C.E)**

**MARCH, 2020.**

## **CERTIFICATION**

This is to certify that this project work titled “Impact of online teaching on teaching and learning activities in secondary school during COVID-19 pandemic” was carried out by **OLANIYAN Tawakalit Oluwabukolami**, Matric. No: 17012102083 in the Department of Primary Education, Tai Solarin College of Education, Omu-Ijebu under my supervision.

---

**Dr. Oba-Adenuga M.A.**  
**Supervisor**

---

**Date**

## **DEDICATION**

This research project is dedicated to Almighty God, my creator, source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this programme.

## **ACKNOWLEDGEMENT**

My sincere gratitude goes to almighty God for His favour and protection throughout this research work and my stay in the college.

I acknowledge the effort of my supervisor, Dr. Oba-Adenuga M.A in going through this project with patience, criticisms and suggestions which resulted in the success of this research work. I am also grateful to the Head of the Department of Primary Education and the other staff in the department for their encouragement during this research work I say a big thank you.

I also express my profound gratitude to my dear parents Mr and Mrs Olaniyan for their financial assistance and encouragement all through my stay in this college

My sincere thanks also goes to all my colleagues in Tai solarin College of education.

Finally, my sincere thanks and appreciation goes to others whose names are not mentioned in this work. May God bless you all (Amen).

## **ABSTRACT**

*The study evaluates the impact of online teaching on teaching and learning activities in selected secondary schools in Ijebu-ode local government area of Ogun state. The respondents for the study comprised of secondary school students in private school. A total of 100 respondents were randomly selected for the study. The following hypotheses were tested ;COVID-19 has significant impact on teaching and learning activities, there is no significant difference in the perception of students who were exposed to online teaching and those that were not exposed to online teaching during the COVID-19 pandemic, there is no significant difference in the male and female students perception on impact of online teaching on teaching and learning activities during the pandemic, there is no significant difference in the boarding and day students perception on impact of online teaching on teaching and learning activities during the pandemic. Data was analysed using the descriptive analysis such as frequency counts, percentages, mean, standard deviation, while the inferential analysis of t - test was used to test the hypotheses. The study has the following findings; Students` perception shows that COVID – 19 has significant impact on their teaching and learning activities, no significant difference in the perception of students` who were exposed to online teaching and those that were not expose to online teaching on impact of COVID – 19 on teaching and learning activities, no significant difference in the male and female students` perception on impact of COVID – 19 on teaching and learning activities and no significant difference in the boarding and day students` perception on impact of COVID – 19 on teaching and learning activities. Based on these findings, recommendations were made.*

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 BACKGROUND TO THE STUDY**

The recent outbreak of the Coronavirus pandemic increased the gaps in the education sector globally. Though, the Coronavirus pandemic is novel, but it already has noxious effects on humanity. COVID-19 outbreak has created educational disruptions, and global health concerns that proved very difficult to manage by global health systems. As at now, no nation or race across the world is immune from the coronavirus pandemic, and the entire world seems overwhelmed by the speed of the spread and the devastating effects of COVID-19. The coronavirus pandemic has no boundaries, and the effect is large and fast. Just within few months of the outbreak of the disease, it has drastically changed the lifestyles of the entire world with billions of people being forced to stay at home, observe self-isolations, and work and learn from home. It has limited the freedom of people to move, trade or associate. Not only has COVID-19 caused a total lockdowns in many countries across the world, but it also caused the death of thousands of people including, women, and the elderly. It was more worrisome to know that reports from various continents, including, America, Africa, Asia, and Europe indicated a daily increase in the number of new cases, and mortality due to COVID-19 (UNESCO, 2020).

From 30 December, 2019 through 11 October, 2020 over 37 million COVID-19 cases and 1 million deaths have been reported globally. Nearly half of these cases (48%) and deaths (55%) continue to be reported in the Region of the Americas with the United States of America, Brazil and Argentina accounting for the greatest numbers of new cases and deaths in the region (WHO, 2020).

The number of Coronavirus deaths was soaring with no immediate solutions in sight. The disease showed no sign of slowing down across the globe. As the world becomes increasingly interconnected, so do the risks we face. The COVID-19 pandemic has not stopped at national borders. It has affected all aspects of human activities globally ranging from education, research, sports, entertainment, transportation, worship,

social gathering/interactions, economy, businesses, and politics. Indeed, the entire world was in distress as a result of COVID-19 threats, the reality of the situation was challenging to bear, and the education sector remains one of the worst-hit by Coronavirus outbreak.

Education is no exception. Students from privileged backgrounds, supported by their parents and eager and able to learn, could find their way past closed school doors to alternative learning opportunities. Those from disadvantaged backgrounds often remained shutting out when their schools were shut down.

This crisis has exposed the many inadequacies and inequities in our education systems – from access to the broadband and computers needed for online education, and the supportive environments needed to focus on learning, up to the misalignment between resources and needs.

The lockdowns in response to COVID-19 have interrupted conventional schooling with nationwide school closures, while the educational communities have made concerted efforts to maintain learning continuity during this period, children and students have had to rely more on their own resources to continue learning remotely through the Internet, television or radio. Teachers also had to adapt to new pedagogical concepts and modes of delivery of teaching, for which they may not have been trained. In particular, learners in the most marginalised groups, who don't have access to digital learning resources or lack the resilience and engagement to learn on their own, are at risk of falling behind (UNESCO, 2020).

## **1.2 STATEMENT OF THE PROBLEM**

Coronavirus Disease (COVID-19) outbreak poses serious concerns to global education systems. Efforts to contain COVID-19 prompted unscheduled closure of schools in more than 100 countries worldwide. COVID-19 school closures left over one billion learners out of school. Many schools embarked on online teaching to engage students to be able to complete the curriculum.

In Nigeria, consequent upon the economy situation, most parents cannot afford the facilities needed by their children to join online classes. As a result, many students lag behind in their studies. While some schools conducted online teaching and learning activities, some could not. This study investigates the perception of students on the impacts of online teaching on teaching and learning activities in secondary schools during COVID-19 pandemic.

## **1.3 HYPOTHESES OF THE STUDY**

The following would be the hypotheses of the study:

1. COVID-19 has significant impact on teaching and learning activities.
2. There is no significant difference in the perception of students who were exposed to online teaching and those that were not exposed to online teaching.
3. There is no significant difference in the male and female students perception on impact of online teaching on teaching and learning activities in secondary schools during COVID-19 pandemic.
4. There is no significant difference in the boarding and day students perception on impact of online teaching on teaching and learning activities in secondary schools during the COVID-19 pandemic

#### **1.4 RESEARCH QUESTIONS**

1. How does online teaching impact the teaching activities during schools closure?
2. What are the impacts of online teaching on teaching activities during school closure due to COVID-19 pandemic?
3. How does online teaching impact the learning activities during COVID-19 pandemic?
4. What are the impacts of online teaching on learning activities during COVID-19 pandemic?

#### **1.5 SCOPE OF THE STUDY**

This study would cover the impacts of online teaching on teaching/learning activities in secondary school during the COVID-19 pandemic.

#### **1.6 SIGNIFICANCE OF THE STUDY**

This study will provide an insight into the impacts of online teaching on the teaching/learning activities in secondary school during COVID-19 pandemic. This study will help the administrators to ascertain the level of damages the schools close down has caused. Furthermore, the study will again be helpful for researchers, students and lecturers. Government official, policy makers and schools administrators will benefit from the recommendation of the study.

## **1.7 LIMITATION OF STUDY**

This research work is aim to investigate impacts of online teaching on the teaching/learning activities in secondary school during the COVID-19 pandemic in Ijebu-Ode of Ogun State, Nigeria.

The study was limited to the only selected secondary schools in in Ijebu-Ode of Ogun State, Nigeria and to a number of reasons which include financial constraint.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 What is Coronavirus (Covid-19)**

On January 30, 2020, the World Health Organization (WHO) announced that this outbreak had constituted a public health emergency of international concern (Mahase 2020). The novel coronavirus was initially named 2019-nCoV and officially as severe acute respiratory syndrome coronavirus 2 (SARSCoV-2). As of February 26, COVID-19 has been recognized in 34 countries, with a total of 80,239 laboratory-confirmed cases and 2,700 deaths (WHO 2020).

#### **2.2. Viral Etiology**

According to recent research, similar to SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV), SARSCoV-2 is zootoxic, with Chinese horseshoe bats (*Rhinolophus sinicus*) being the most probable origin (Chan, *et al*, 2020). Also The Chinese Preventive Medicine Association (2020) accounted pangolins as the most likely intermediate host of the virus.

### **2.3. Clinical Symptoms**

Most of patients with COVID-19 represent relatively serene cases. According to recent studies (Yang, *et al*, 2020) and relevant data from the National Health Commission of China (2020), the proportion of severe cases among all patients with COVID-19 in China was around 15% to 25%. Majority of patients experienced fever and dry cough, while some also had shortness of breath, fatigue, and other atypical symptoms, such as muscle pain, confusion, headache, sore throat, diarrhea, and vomiting (chen, *et al*, 2020). Among patients who underwent chest computed tomography (CT), most showed bilateral pneumonia, with ground-glass opacity and bilateral patchy shadows being the most common patterns (Guan, *et al*, 2020). Among hospitalized patients in Wuhan, around one-fourth to one-third developed serious complications, such as acute respiratory distress syndrome, arrhythmia, and shock, and were therefore transferred to the intensive care unit (Chen, *et al*. 2020). In general, older age and the existence of underlying comorbidities (e.g., diabetes, hypertension, and cardiovascular disease) were associated with poorer prognosis (Wang, *et al*, 2020).

## **2.4. Covid-19 Diagnoses and Treatment**

The diagnosis of COVID-19 can be based on a combination of epidemiologic information (e.g., a history of travel to or residence in affected region 14 d prior to symptom onset), clinical symptoms, CT imaging findings, and laboratory tests (e.g., reverse transcriptase polymerase chain reaction [RT-PCR] tests on respiratory tract specimens) according to standards of either the WHO (2020) or the National Health Commission of China (2020). It should be mentioned that a single negative RT-PCR test result from suspected patients does not exclude infection. Clinically, we should be alert of patients with an epidemiologic history, COVID-19–related symptoms, and/or positive CT imaging results. So far, there has been no evidence from randomized controlled trials to recommend any specific anti-nCoV treatment, so the management of COVID-19 has been largely supportive (WHO 2020). Currently, the approach to COVID-19 is to control the source of infection; use infection prevention and control measures to lower the risk of transmission; and provide early diagnosis, isolation, and supportive care for affected patients [20]. A series of clinical trials are being carried out to investigate interventions that are potentially more effective (e.g., lopinavir, remdesivir; Del Rio and Malani 2020). On January 8, 2020, a novel coronavirus was officially

announced as the causative pathogen of COVID-19 by the Chinese Center for Disease Control and Prevention (Lu, *et al*, 2020). The epidemics of coronavirus disease 2019 (COVID- 19) started from Wuhan, China, last December and have become a major challenging public health problem for not only China but also countries around the world (Phelan, *et al*, 2020).

## **2.5 Review of Covid-19 Illness**

Coronavirus Disease is an infectious illness that initially arose in Wuhan, China in 2019. It was later coded “COVID-19” by the W.H.O which stands for Coronavirus Disease 2019. The Coronavirus episode stays one of the most exceedingly terrible worldwide pandemics for quite a long time. The death rate took off and the simple of spread was disturbing. Exploration shows that more seasoned individuals and those with basic clinical issues like cardiovascular infections, diabetes, ongoing respiratory sickness, and malignancy were bound to create genuine ailments from coronavirus (W.H.O, 2020). A portion of the side effects of Coronavirus incorporate; Sore throat, runny nose, consistent hacking/sniffing, breathing trouble and weariness

As at the time of this study, there were no reliable treatments for Coronavirus, but a series of researches were in the pipeline across the world towards finding a clinical

vaccine for the contagion. However, recent events shows that behavioural change can help contain the spread of coronavirus. Some of the suggested measures to halt the coronavirus pandemic include;, improved individual habits such as personal hygiene, including constant washing of hands with alcohol-based sanitizers, good respiratory attitude (close coughing and sneezing), and other personal protection practices like wearing of face mask, social distancing, avoiding touching of the face, and reducing contacts with people through self-isolation at home or avoiding nonessential travels or gatherings. Coronavirus is a global problem that requires more action coordination and global cooperation to successfully contain the outbreak and to deal with its aftermath effects. Consequently, the United Nations appealed for 2 billion dollars to support global response efforts towards tackling the coronavirus pandemic. The consequences of COVID-19 could be more severe; if people do not comply or adhere strictly to public health regulations and advice.

## **2.6 Worldwide Reactions to Coronavirus Pandemic**

A proactive reaction is basic to the regulation of any sickness episode, yet the Coronavirus shocked the world and most nations were not arranged at first for the pandemic, including the world forces. Shortly after the outbreak of COVID-19, the World Health Organization (W.H.O) issued guidelines and updates on how to mitigate the spread of the pandemic, and thereafter, many countries adopted different measures in addition to the W.H.O guidelines to contain the spread of the disease. There were lockdowns in most parts of the world, and people were asked to work from home. Some countries even deployed their military to enforce coronavirus restrictions, and to reduce the number of covidots. There were increased demands for health equipment including, protective gowns, sanitizers, face masks and hand gloves. Also, large gatherings and sporting activities were suspended at both local and international levels. Global responses to Coronavirus pandemic were varied from country to country, but most countries endorsed the closure of school strategy as a means to contain the spread of COVID-19. Some selected COVID-19 responses across the world particularly as it relates to the closure of schools due to Coronavirus are highlighted below:

## 2.6.1 ASIA

The first cases of COVID-19 in Asia were reported to the WHO on 31st December 2019, via the WHO China Country Office. The cases, detected in Wuhan City, Hubei Province, were the [first cases of COVID-19 to be reported globally](#) and as the cause of the condition was then unknown they were reported as 'cases of pneumonia with unknown etiology (unknown cause)'. The causative agent was identified as a novel coronavirus, later named SARS-CoV-2, on 7th Jan 2020 by the Chinese authorities.

As of the 3rd of December 2020 Asia has [9.8 million cases and 161,000 deaths](#). The response to COVID-19 of individual countries in Asia varies hugely. Each individual country's coronavirus status can be accessed [here](#), a website updated daily with the cases and deaths of each country in Asia. All countries in Asia except Turkmenistan and North Korea have reported COVID-19 cases.

Schools and other public institutions were shutdown to mitigate the spread of the virus. The closure of schools and other measures put in place by the government proved effective and the pandemic was contained to a large extent. The country also closed its borders with some neighbouring countries. In India, all schools and educational institutions were closed down and the government imposed “Janata”

Curfew which restricted all citizens to stay at home to contain the spread of Coronavirus. The police also went round some cities to create public awareness about the pandemic.

In Iran Sri Lanka Singapore Qatar Philippines et.c, the government closed all schools as part of the preventive measures to halt the spread of coronavirus. Although, the country was among the epicenter of the coronavirus outbreak, and the death tolls in the country were high. The coronavirus increased Iran's economic problems, having been faced with economic sanctions from the West earlier.

## **2.6.2 AMERICA**

Countries like the United States opened their visitation doors for medical professionals such as doctors and nurses who were working or willing to treat the effects of COVID-19. In the United States, numerous schools were shut down, and planned tests and assessments were likewise dropped. (Madeline, 2020). New York and the California States were among the worst-hit states in the U.S and the number of cases increased steadily despite strong measures put in place by both the federal and state governments to contain the pandemic. At a point, the country surpassed China in the number of cases of Coronavirus, but the country is determined to defeat

the pandemic. School closures in the U.S affected over 60 million students in the country. In Spain, over 11 million students were affected by school closures for mitigation of the spread of Coronavirus. Regional governments in the country closed down schools in response to the increased cases of Coronavirus in the country.

### **2.6.3 EUROPIAN**

In Germany, schools were shutdown in response to the spread of coronavirus. The death rate due to coronavirus was reported to be low compared to their neighbours. The country also earmarked more than 800 billion dollars to fight the pandemic. In Russia, Schools were shutdown, and several other measures were taken to halt the pandemic. The death toll for coronavirus in Russia was reported to be low, but measures were put in place to contain the pandemic.

The U.K also opened their visitation doors for medical professionals such as doctors and nurses who were working or willing to treat the effects of COVID-19. Also, large gatherings and sporting activities were suspended at both local and international levels. Big sporting events like the prestigious European Champions League games were played behind closed doors before they were suspended and reopened.

The closure of schools in Spain particularly in Madrid led to the suspension of job contracts for people who work at school cafeterias and in special education (El Pais, 2020). The closure of schools in Spain was very necessary considering that the country lost 849 people in a day due to Coronavirus. Middle East Monitor (2020), reported that schools and universities across the kingdom were ordered to close down for Coronavirus by the Ministry of Education for months. The government however, directed that “Virtual schools and distance education be activated to ensure that the educational process continues in an effective and quality manner”.

In France, the government ordered the closure of all schools in a televised broadcast by President Macron. The measure was in response to the increased health crisis in the country due to coronavirus. The country was badly affected just like their counterparts in many parts of the world. The country was badly affected just like their counterparts in many parts of the world.

## **2.6.4 AFRICA**

In Senegal, schools were shutdown to limit the spread of COVID-19. The country was the first sub-Saharan African country to close down schools due to coronavirus. In South Africa, the government directed all schools to close down in response to the coronavirus pandemic. This is in addition to the prohibition of social gatherings of more than 100 people. New cases were reported in the country and campaigns for behavioral changes were carried out to reduce the spread of the disease.

. In Ghana, schools were shutdown to contain the spread of coronavirus disease. The government also released 100 million US dollars to enhance the fight against the pandemic. The country reacted proactively to contain the spread of the Virus. In Madagascar, the country has recorded zero COVID-19 death so far, and the country has claimed a breakthrough in Herbal medicine for COVID-19 treatment. However, the WHO issued warned that such claim has not been scientifically approved and cannot be recommended by the organization as cure for COVID-19.

In Nigeria, the federal government ordered a total close down of all schools. The decision was largely applauded, and the National University Commission (NUC), a regulatory body for all universities in Nigeria also gave a follow-up directive to all

universities in the country to shutdown. The government also suspended social gatherings, and workers were asked to work from home. An Italian who was reported to be the first case of coronavirus in Nigeria was successfully treated and discharged according to the government, but new cases emerged thereafter. Thus, the country needs to do more in terms of disaster preparedness and response. The untimely closure of schools was good supportive measures to contain the spread of the disease, but it also had some adverse consequences on millions of students globally who were faced with multiple challenges in their education.

### **2.3 Effect of Coronavirus Pandemic on Education**

The outbreak of Coronavirus negatively affected educational activities worldwide. The coronavirus pandemic affected educational systems worldwide, leading to the widespread closures of schools (Wikipedia, 2020). It created serious disruptions in academic activities, as well as in career plans. As part of the global efforts to combat COVID-19, many countries across the world closed down schools in an attempt to contain the coronavirus pandemic. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) monitoring, over 100 countries implemented nationwide closures, impacting over half of the world's student

population (UNESCO, 2020a). Even Britain, where Prime Minister Boris Johnson - one of those who earlier opposed the move, later admitted that “closing down schools could place further downward pressure on the upward curve of the Coronavirus outbreak”(ABC News, 2020). Some of the countries that closed down schools due to COVID-19 include, Nigeria, Ghana, Senegal, South Africa, China, Kazakhstan, Ethiopia, Honduras, India, Japan, Iran, USA, France, Spain, Italy, North and South Korea, Lebanon, Vietnam, Thailand, Germany, and South Korea just to mention but a few. School closures carry high social, educational and economic costs, and the disruptions they cause touch people across communities, but their impact is particularly severe for disadvantaged persons and their families (UNESCO, 2020b).

The disruption caused by COVID-19 in the educational sector may last longer than expected if a more reliable solution for coronavirus is not found on time, and the spread of the disease continues. UNESCO Director-General, Audrey Azoulayals cited by VOA News (2020), warned that “the global scale and speed of the educational disruption due to coronavirus is unparalleled and, if prolonged, could threaten the right to education”. No doubts, unplanned school closures can cause severe problems for students, educators, parents and the society at large. It could negatively affect the academic interest and performance of students. If the students are not engaged

productively, it could lead to idleness which might result in youth involvement in crimes, loss of interest in learning, and poor academic performance. The US Centre for Disease Prevention and Control (CDC) also expressed concerns about the implications of school closures. According to the CDC, “longer closures may result in more students congregating outside of schools. Quentin (2014), states that school closing is very controversial, and it can have spillover effects on a large number of students in receiving schools. It can affect the quality of teaching and learning and academic achievement particularly for students with special needs or those with learning difficulties that often requires more physical attention and guidance from the teachers. Though, technology can be used to remedy some of the fallouts from school closures, but it cannot replace the important effect of face-to-face interactions by students and teachers. Besides, many students do not have the necessary access to supportive technologies which makes it harder to maximize the potentials of learning technology during school closures. However, against all odds, mathematical model and empirical analysis of reactive closures of schools in past pandemics indicates that it reduces the total number of cases in the community by 25 percent and postpones the peak of the pandemic by a week or two, while proactive closures of school during

pandemics remains one of the most beneficial interventions that can be employed to mitigate the impact of epidemic disease (Erika and Nicholas, 2020).

## **2.4 Impacts of Coronavirus on School Closures**

School closure implies the shutting down of schools because of the pandemic, emergencies, labour strikes, disasters or deliberate efforts to reposition a school or curb crimes in a given campus or environment. This means that school closures are not only for emergencies or pandemics, but also a deliberate way of addressing some identified gaps in a given school. For instance, in Nigeria, the government or school authorities often shutdown schools to address security issues such as cultism, terrorism or violent protests on the campus. Gewertz (2009) cited in Ben, Mathew, and Kristen (2010) reported that “Obama’s administration endorsed closure as part of an array of strategies to turn around 5,000 failing schools in the United States during his regime. Even though, school closures sometimes may be for good reasons, but the recent school closures for Coronavirus is detrimental to many educational systems across the world. As of 23 March, 2020, over 1.3 billion learners were out of school due to school closures in response to COVID-19 (Wikipedia, 2020b).

According to Erika and Nicholas (2020), school closures can either be reactive or proactive. Erika and Nicholas further stated that reactive closing schools occur upon the discovery of coronavirus case among the students, staff or parents. While proactive school closure occurs before the disease even reaches the doors of the school. Madeline (2020) opined that school closures due to coronavirus has posed new problems like how to make the transition to online and at-home learning, and how to cater for those who rely on school for food and housing security. School closures for coronavirus tends to increase pressures on students, teachers and parents especially those with limited digital skills, education and resources for continued education. It increases the burden on parents to not only struggle to provide for the home, but also to perform the supervision task of ensuring that their children learn from home. Unparalleled school closures increases the pressure on hospitals because they have to cater for as many health situations as possible that ordinarily could have been attended to by school health centers. Coronavirus school closures could increases student debt, extend the graduation time of students, and shatter the academic dreams of students, as well as programme schedules of educational institutions. Protracted school closures may result to increase rate of dropouts due to loss of interest and lack of resources to continue. If not well managed, school closures

can also increase the rate of crimes, because prolonged school closures can lead to idleness which contributes to negative peer influences and youth involvement in crimes. Education jobs were also affected; many workers risks pay cuts or even disengagement from work during unscheduled school closures.

According to UNESCO (2020b), some of the harmful effects of school closures for coronavirus are as follows:

1. Interrupted learning: School provides essential learning and when they are closed, students are deprived of opportunities for growth and development.
2. Nutrition: Many youngsters rely on free or discounted meals provided at schools for food and healthy nutrition. This is compromised as a result of school closures for coronavirus.
3. Unequal Access to digital learning portals: lack of access to technology or good internet connectivity for continued learning during school closures.
4. Increased pressure on schools and school system that remain open; Localized school closures place burdens on schools as parents tend redirect their children to open schools.

5. Social Isolation: Considering the fact that educational institutions are hubs for social activity and human interactions, school closures can deprive youth and children of some social communications and socializations that are essential to learning, development and creativity.

Research activities were negatively affected because school closures and lockdowns limit researchers' ability to conduct researches particularly in situations whereby face-to-face interactions with students and teachers are required or access to school facilities or research laboratories were denied. School driven innovations and research are also affected during school closures.

Erika and Nicholas (2020) suggested that closing schools are not the only option to mitigate coronavirus. They advocated for authorities to give parents some flexibility to choose what is best for their families, while implementing stronger mitigation measures. However, in contrast to Erika and Nicholas's position, the president of the New South Wales Teachers Federation opposed the opening of schools during the outbreak of coronavirus. He believed that "the design of their schools and the size of the classrooms makes it impossible" to implement social distancing in schools (Michael, 2020). To mitigate the effects that accompanied the closures of schools,

educators and learners had to rely on use of technological tools and platforms to ensure continued education. Consequently, it is important to admit in the present study that despite the perceived challenges imposed by school closures for coronavirus, the option remains one of the most effective measures to halt the spread of the pandemics.

#### **2.4.1 Impact on Education: Graduates and School Leavers**

There is no doubt that students in terminal classes in lower and higher levels of education system of Nigeria has been held on a spot; they were unable to graduate or even move to the next level in their academic pursuit this has led to the set a great back of the smooth running of educational sector of Nigeria and the world at large. What makes education beautiful and fulfilling is the progress in terms of moving to the next level, graduating and becoming a useful and acceptable member of the society after being exposed to the teaching-learning processes in the school. The careers of this year's university graduates may be severely affected by the COVID-19 pandemic. They have experienced majorly teaching interruptions in the final part of their studies, interruptions in their assessments, and finally they are likely to graduate at the beginning of a major global recession, because there is no doubt there will be global recession in the economy of the world at large at the end of the pandemic

lockdown. While there was boom in the economy of Nigeria in the past, some graduates still find it difficult to get their desired jobs in the labour market, now that there is every tendencies that the economy of the country could experience a drastic meltdown after the covid-19 pandemic, how will graduate get menial jobs talk less of their desired jobs. Unfortunately if this persists for a longer period of time, there might be a great hit on the smooth running of the economy, educational and other sectors of the country at large. Evidence suggests that poor market conditions at labour market entry cause workers to accept lower paid jobs for survival first, and that this has permanent effects on the careers of some graduate because they have been doing the jobs far related to their area of specializations for so many years which on the long run has made them not been fulfilled in their choice careers. Oreopoulos *et al* (2012) show that graduates from programmes with high predicted earnings can compensate for their poor starting point through both within- and across-firm earnings gains, but graduates from other programmes have been found to experience permanent earnings losses from graduating in a recession.

## **2.5 Technological Therapy for Coronavirus on School Closures**

The unplanned closure of schools for COVID-19 came with obvious implications on the education industry globally even though; the decision to close schools appears to be right considering the need to contain the Coronavirus pandemic. The fortuitous closure of schools worldwide revalidated the need for adoption and deployment of cutting edge technologies in education. The outbreak of COVID-19 increased the global demand for online education. Technology has the potential to facilitate education from any location including home. Thus, as the world struggles to contain COVID-19 or any future outbreaks, the use of educational technology platforms would become the new reality for educational institutions, educators and learners. Technology is integral to student-teacher connection and communication especially in moments of isolations, quarantines, and lockdowns as a result of health crises and other emergencies. Technology is an essential tool to offer educational, psychological, spiritual, and medical advice or supports to parents, educators and students during and after pandemics. Technology aid report of cases, testing and social distancing which are critical to mitigate the spread of COVID-19. In some climes, robots and drones were also used to deliver goods to reduce human interactions. Staying at home all day could be very challenging for students especially the digital mmillennials who are very

mobile and inquisitive in nature. Therefore, with the aid of technology, learners and educators can be productively and educationally engaged to reduce the boredoms that could push them become Covidiot during lockdowns for pandemics.

Educational institutions that have inculcated the use of emerging technologies in their systems before the outbreak of COVID-19 had a comparative advantage over those who were yet to embrace technology in their operations. Teachers were required to teach remotely and students needed adjustments to the new teaching and learning techniques. The transition to online education posed a challenge to learners in countries where there were no relevant infrastructures and facilities that facilitate online education. The problem of the digital divide was also a big issue particularly for learners in rural areas. This is because students and teachers in rural areas often lack the needed facilities and expertise to implement remote teaching and learning. While many lacks the required digital skills to implement online education. Technology remains a therapy to bridge the educational gaps that often emanates from unscheduled closure of schools during pandemics.

## **2.6 Idea of Online Education**

Technology is a key component of education in the 21<sup>st</sup> century. The increasing use of technology in education has modified teachers' methods from the traditional approach that often place them as dispensers of knowledge to a more flexible approach where they act more as facilitators, mentors and motivators to inspire students to participate and learn (Onyema & Deborah, 2019). Technology facilitates Remote learning, Distance learning, Virtual learning, Blended learning, Mobile learning, Distributed learning, Machine learning, Ubiquitous learning, Deep learning, Cooperative and Collaborative learning. Most aspect of education is going digital, and education stakeholders including students are confronted with the challenge of transition to online education. The use of appropriate educational technologies increases accessibility to learning resources such as Massive Open Online Courses (MOOCs), and multiple learning approaches to meet the need of diverse learners (Onyema et al., 2019).

Online education is a general concept for teaching and learning online with the aid of technology tools and platforms. The success of online education depend on factors including, good internet connections, learning software, digital skills, availability and access to technology. Online education platforms are vital tools that support inclusive

education and online learning. Online education has its roots in distance education and the emergence of digital technologies that facilitate the efficient and reliable delivery of lectures, virtual classroom sessions and other instructional materials and activities via the internet (Onlineeducation.com, 2020). With the high penetration of the internet and mobile technologies across the globe, online education platforms can be maximized to bridge the gaps in education, thereby reducing the rate of global illiteracy. There are broad ranges of online education tools/platforms that facilitate online education particularly in times of outbreaks like the Coronavirus pandemic. Some of these technology tools/platforms are listed below:

1. Google Classroom/Open Online education ([edu.google.com](https://edu.google.com))
2. Coursera.org
3. Zoom ([zoom.us](https://zoom.us))
4. Whatsapp.com

The use of educational technologies facilitates online education, student-teacher interactions, connection and relationships. It enhances teaching and learning

experiences, content creation, course sharing, assessments, and feedback. Educators can reach and interact with their students on the go from any location, and lectures can be fixed at any time of convenience. Educators and students can optimize these technologies to supplement classroom teachings, and to improve their digital skills in line with emerging trends in education. More so, knowledge of technology increases educators' and students' interest, competence, confidence, creativity, employability and output, and also prepares them for the future

## **2.7 Difficulties of Learning from Home**

The Coronavirus outbreak has forced millions of students to study and learn from home. This is not a new phenomenon because the home has long been epicenters of learning particularly as regards informal education. Learning from home is becoming a new normal for students. According to Education Task (2020), the majority of university students still prefer to study in the comfort of their own homes because the learners tend to have everything at their disposal without having to leave their chairs. However, the realities of receiving formal education from home could be very challenging to many educators, learners and parents especially those in developing countries where the accessibility, availability and use of technology in education are

not widespread. Apart from the cost of accessing online education, many other factors such as network issues, poor power supply, distractions, poor digital skills, inaccessibility and availability issues can also hinder smooth study from home. There is also the problem of time to learn new technologies that might be required to learn from home, and noises that emanate internally or externally from neighbours and neighbourhood. Because unequal access to technology is another serious concern for many countries, prolonged school closures could deprive millions of students' access to education particularly those in third world countries, rural areas, and people with special needs. UNESCO understood these challenges, and efforts were made by them to help educators and students in the affected countries to teach and learn online from their homes through the provision of free software that facilitates remote education. Catherine (2020), reported that UNESCO assembled an online guide with links to distance learning apps and other resources to mitigate the effects of school closures for Coronavirus. Students were expected to optimize the Coronavirus mandatory school closures to improve their digital learning skills and home study habits. The challenges imposed by Coronavirus could be transformed into an opportunity by learners to advance their problem-solving skills and digital capabilities.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

The term methodology is used to describe all activities involved in the collection of the necessary information required for this research work. This chapter describes how the study was designed by indicating the techniques and procedures used for the research and accumulation of data for the study. It comprises the description of the research design, population, sample and sampling techniques, sources of data, instrument for data collection and data analysis and techniques.

#### **3.2 RESEARCH DESIGN**

Research design is a term used to describe the number of decisions to be used in collecting data before data are collected. It suggests however, that this decision must be systematic or scientific in nature. However, a survey research was adopted for the conduct of this study. This is in line with the words that methodology is the basic in elaborating research methodology.

#### **3.3 POPULATION OF THE STUDY**

The population of this study comprises of students in selected (private) secondary schools in Ijebu-ode, Ogun state.

#### **3.4 SAMPLING TECHNIQUE/ SAMPLE SIZE**

Using the random sampling technique, the researcher purposively selected a sample size of 100 respondents. Therefore, the sample size for the study was 100 respondents.

### 3.5 DESCRIPTION OF RESEARCH INSTRUMENT

The research instrument used in the study was the questionnaire. A questionnaire is a list of questions to be answered by a respondent to get their views about a subject. It was preceded by a covering letter, introducing the researcher, explaining the purpose of the research and soliciting assistance in providing the required information. (Onweluzo, 2009)

A total number of twenty (20) items would draw and administered to the respondents. They would divide into two sections; section A will contain items on the demography of respondents and section B consists of items that would answer the research questions as follow:

- Items 1-5 answered research question one.
- Items 6-10 answered research question two.
- Item 11-15 answered research question three.
- Items 16-20 answered research question four.

### 3.6 VALIDITY AND RELIABILITY OF THE INSTRUMENT

The questionnaire that was used for this study was thoroughly scrutinize by the supervisor for clarity, precision, and comprehension.

### 3.7 DATA COLLECTION METHOD

Data was collected through questionnaire which the researcher was administered face to face to the respondents, 100 copies of questionnaire was distributed to the respondents.

### 3.8 METHOD OF DATA ANALYSIS

Simple tables, frequency and percentage was adopted in the presentation and analysis of the data generated for the study. These statistical tools was used because they were suitable means of breaking down and analyzing the generated data.

**CHAPTER FOUR**  
**PRESENTATION AND ANALYSIS OF DATA**

This chapter contains the results of data analysis. The general descriptions of the data were presented. Data were analyzed using the descriptive analysis such as frequency counts, percentages, mean, standard deviation, while the inferential analysis of t - test was used to test the hypotheses using Statistical Package for Social Science (SPSS) Version 23.0 tested at 0.05 level of significance.

**4.2.0: Demographic Data of the Respondents**

**Table 4.2.1 showing respondents Name of School**

		Freque ncy	Perce nt	Valid Percent	Cumulati ve Percent
Valid	Great Foundation Model College	25	25.0	25.0	25.0
	The Fortress College, Imosan	25	25.0	25.0	50.0
	Regan Canadian International School	25	25.0	25.0	75.0
	Adeola Odutola Private	25	25.0	25.0	100.0
	Total	100	100.0	100.0	

Table 4.2.1 revealed that each school has 25 (25.0%) participants.

**Table 4.2.2 showing respondents Gender**

		Freque ncy	Perce nt	Valid Percent	Cumulati ve Percent
Valid	Male	53	53.0	53.0	53.0
	Female	47	47.0	47.0	100.0
	Total	100	100.0	100.0	

Table 4.2.2 revealed that 53 (53.0%) of the respondents were male, while 47 (47.0%) were female.

**Table 4.2.3 showing respondents who were exposed and those who were not exposed to online teaching**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Exposed to online Teaching	50	50.0	50.0	50.0
Valid Not Exposed to online Teaching	50	50.0	50.0	100.0
Total	100	100.0	100.0	

Table 4.2.3 revealed that 50 of the students were exposed to online teaching while 50 were not

**Table 4.2.4 showing respondents Age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	09 - 11	6	6.0	6.0	6.0
	12 - 14	33	33.0	33.0	39.0
	15 - 18	60	60.0	60.0	99.0
	19 years above	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table 4.2.4 revealed that 6 (6.0%) of the respondents were between the age of 0 – 11 years, 33 (33.0%) were between the age of 12 – 14 years, 60 (60.0%) were between the age of 15 – 18 years, while 1 (1.0%) was 19 years above

**Table 4.2.5 showing respondents Class**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SS 1	30	30.0	30.0	30.0
	SS 2	15	15.0	15.0	45.0
	SS 3	55	55.0	55.0	100.0
	Total	100	100.0	100.0	

Table 4.2.5 revealed that 30 (30.0%) of the respondents were in SS one, 15 (15.0%) were in SS Two, while 55 (55.0%) were in SS Three.

**Table 4.2.6 showing respondents School Section**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Boarding	41	41.0	41.0	41.0
Day	59	59.0	59.0	100.0
Total	100	100.0	100.0	

Table 4.2.6 revealed that 41 (41.0%) were boarding students, while 59 (59.0) were day students.

### 4.3.0 TESTING OF HYPOTHESES

H1: There is no significant impact of online teaching on teaching and learning activities based on students' perceptions

Table 4.3.1: A One Sample Analysis Test showing students' perceptions on impact of COVID – 19 on Teaching and Learning Activities

SCORES	N	Mean	Std. Deviation	Std. Error Mean	Df	Sig. Level
Impact of COVID – 19	100	56.76	6.796	.680	99	0.000

Table 4.3.1 shows (mean = 56.76; Std. Deviation = 6.796; Std Error Mean =.680). However, since the significant value 0.000 is less than 0.05 with df of 99 hence, it would then be concluded that students' perception shows that online teaching has no significant impact on their teaching and learning activities during COVID-19 pandemic.

H2: There is no significant difference in the perception of students who were exposed to online teaching and those that were not exposed to online teaching during lock down on impact of online teaching on teaching and learning activities during the COVID-19 pandemic.

Table 4.3.2: A T – Test analysis showing perception of students who were exposed to online teaching and those that were not exposed to online teaching

SCORES	N	Mean	Std. Deviation	Std. Error Mean	Df	Sig. Level
Exposed to online teaching	50	57.64	6.919	.978	98	0.197
Not exposed to online teaching.	50	55.88	6.623	.937		

Table 4.3.2 shows (mean = 57.64; Std. Deviation = 6.919; Std Error Mean =.978) for opinion of those that were exposed to online teaching and (mean = 55.88; Std. Deviation = 6.623; Std Error Mean = .937) for those that were not exposed to online teaching. However, since the significant value 0.197 is greater than 0.05 with df of 98 hence, it would then be concluded that there is no significant difference in the perception of students` who were exposed to online teaching and those that were not expose to online teaching on impact of online teaching on teaching and learning activities during COVID-19 pandemic.

H3: There is no significant difference in male and female students` perception on impact of online teaching on teaching and learning activities during COVID-19 pandemic.

Table 4.3.3: A T – Test analysis showing male and female students` opinion on impact of online teaching on teaching and learning activities during COVID-19 pandemic.

SCORES	N	Mean	Std. Deviation	Std. Error Mean	df	Sig. Level
Male	53	56.42	7.126	.979	98	0.592
Female	47	57.15	6.457	.942		

Table 4.3.3 shows (mean = 56.42; Std. Deviation = 7.126; Std Error Mean =.979) for male students` opinion and (mean = 57.15; Std. Deviation = 6.457; Std Error Mean =

.942) for female students` opinion. However, since the significant value 0.592 is greater than 0.05 with df of 98 hence, it would then be concluded that there is no significant difference in the male and female students` perception on impact of online teaching on teaching and learning activities during COVID-19 pandemic

H4: There is no significant difference in boarding and day students` perception on impact of online teaching on teaching and learning activities during COVID-19 pandemic.

Table 4.3.4: A T – Test analysis showing boarding and day students` opinion on impact of COVID – 19 on teaching and learning activities

SCORES	N	Mean	Std. Deviation	Std. Error Mean	Df	Sig. Level
Boarding	41	57.27	7.369	1.151	98	0.536
Day	59	56.41	6.409	.834		

Table 4.3.4 shows (mean = 57.27; Std. Deviation = 7.369; Std Error Mean =1.151) for boarding students` opinion and (mean = 56.41; Std. Deviation = 6.409; Std Error Mean = .834) for day students` opinion. However, since the significant value 0.536 is greater than 0.05 with df of 98 hence, it would then be concluded that there is no significant difference in the boarding and day students` perception on impact of online teaching on teaching and learning activities during the pandemic.

#### 4.4.0 DISCUSSION OF FINDINGS

The first hypothesis states that there is no significant impact of online teaching on teaching and learning activities during the COVID-19 pandemic. The findings of this study states that there is no significant impact of COVID – 19 on teaching and learning activities based on students` perceptions. The result of the findings supports the findings of Onyeoma & Deborah (2019) who found that; the increasing use of technology in educational has modify teachers methods from the traditional approach to a flexible approach where they act as facilitators, mentors and motivators to inspire students to learn just like the physical teaching and learning. However, the findings does not support the findings of Madeline (2020) that found that online teaching is

tedious because it increases burdens on parents who not only have to struggle to provide for their children but have to perform the supervision task. The result of this findings may be because all the topics that were taught through online platforms was later revised when the schools re-opened.

The second hypothesis states that there is no significant difference in the perception of students who were exposed to online teaching and those that were not exposed to online teaching. The findings of this study states that there is no significant difference in the perception of students who were exposed to online teaching and those that were not exposed to online teaching during lock down on impact of COVID – 19 on teaching and learning activities. This might be because the respondents (are secondary school students) who are of age and can study on their own with the aid of educational materials in local libraries close to them, besides NGO bodies did a lot of house-to house teaching which really helped a lot of students not to miss out on their studies.

The third hypothesis states that there is no significant difference in the male and female students' perception on impact of online teaching on teaching and learning activities during COVID-19 pandemic. The findings of this study states that there is no significant difference in the male and female students' perception on impact of online teaching on teaching and learning activities during COVID-19 pandemic because, there is no gender inequality in education system, everyone have equal access to educational materials and internet.

And also, as stated in hypothesis 2 discussion “the respondents are secondary school students who are of age and can study on their own with the help of educational materials in libraries close to them” so, all students irrespective of their gender can access it.

The fourth hypothesis states that there is no significant difference in the boarding and day student's perception on impact of online teaching on teaching and learning activities during the COVID-19 pandemic. The findings of this study states that there is no significant difference in the boarding and day students` perception on impact of online teaching on teaching on teaching and learning activities during COVID-19 pandemic.

This is definitely because both boarding and day students were home during the school closure which made them all have equal experience on the impact of online teaching on teaching and learning activities during the pandemic.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 SUMMARY OF FINDINGS**

The objectives of the study were to:

1. To find out if online teaching during COVID-19 pandemic has effect on teaching activities
2. To identify various effect of online teaching during COVID-19 pandemic on teaching activities.
3. To find out if online teaching during COVID-19 pandemic has effect on learning activities.
4. To identify various effect of online teaching during COVID-19 pandemic on Learning activities.

Findings from the study revealed the following

1. Students` perception shows that online teaching during the pandemic has significant impact on their teaching and learning activities.
2. No significant difference in the perception of students` who were exposed to online teaching and those that were not expose to online teaching on impact of online teaching on teaching and learning activities during the pandemic.
3. No significant difference in the male and female students` perception on impact of Online teaching on teaching and learning activities during the pandemic.
4. No significant difference in the boarding and day students` perception on impact of online teaching on teaching and learning activities during the pandemic.

## 5.2 CONCLUSION

The catastrophe posed by coronavirus on education in Nigerian has revealed to us the benefits of online/virtual teaching and learning. A large number of children whose education was completely disrupted for months due to COVID-19 pandemic is a great disaster to the national growth. The consequences could be felt in economies and societies in the years to come.

In Nigeria, nearly all school-children were affected by the lockdown. In a time like this, there is no other option than to adapt to the dynamic situation and accept the change as disasters will continue to occur and technologies will likely help us in managing them. One good effect of COVID-19 pandemic is that it has forced some schools which were earlier reluctant to change, to accept modern technology. At this present age, the importance of online education cannot be over emphasized. Coronavirus disaster could be beneficial to the education sector and could bring a lot of surprising outcomes if well utilized. With the help of online teaching, a large number of students can be taught by a single teacher at the same time. However, accessibility, affordability, flexibility, learning pedagogy, life-long learning, and unstable educational policies are some of the challenges that affect online pedagogy. It is line with these that the study base on the impacts of online teaching on the teaching/learning activities in secondary school during the pandemic. Secondary school students have really improve with the use of computer and other electronic devices such as phones and tablets in learning,

Study show that there is no significant different in the perception of students who are in the boarding and day student, whether male or female on the impact of online teaching on teaching and learning activities.

### **5.3 RECOMMENDATIONS**

From the findings of this study the following recommendations were made:

1. Government should see the need to build good schools and equip them with modern digital facilities that can aid online education by providing digital devices as well as internet connections.
2. Government should ensure inclusion of online teaching and learning such as integrated digital learning platforms, videos lessons, broadcasting through radio and TV etc. to supplement the normal classroom teaching even when there is no pandemics or disaster.
3. Educators as well as students must be trained on how to handle and use online educational devices. Educators must spend quality time to prepare and make their lessons creative, interactive, relevant, student-centered and group-based.
4. Parents should pay personal attention to monitor and supervise their children until they adapt to online teaching and learning environment.

## **DEFINITION OF TERMS**

**COVID-19 PANDEMIC:** Is an infectious illness that initially arose in wuhan, China in 2019, and it later spread throughout the world. It was coded “COVID-19 by W.H.O which stands for coronavirus Disease 2019.

**TEACHING ACTIVITIES:** Are activities deployed by a teacher to bring about or create the conditions for learning.

**LEARNING ACTIVITIES:** Are the activities students participate in to stimulate and make learning easy.

**ONLINE TEACHING:** A learning system based on formalized teaching but with the help of electronic resources.

## REFERENCES

A.L.Phelan (2020) The Novel Coronavirus Originating in Wuhan, China; Challenges for Global Health Governance.<https://jamanetwork.com/journals/jama/article-abstract/2760500> (accessed on 10 December, 2020).

Behrang Tajdin & Louise Adamou(2020)

“Coronavirus”: Are the bodies of victims undermining Iran's official figures?". *BBC*

Chan, J.F.; Yuan, S.; Kok, K.H.; To, K.K.; Chu, H.; Yang, J.; Xing, F.; Liu, J.; Yip, C.C.; Poon, R.W (2020). A Familial Cluster of Pneumonia Associated with the 2019 Novel Coronavirus indicating Person-to-Person Transmission: A Study of a Family Cluster. *Lancet* 395(10223) 514-523.

Chen, N.; Zhou, M.; Dong, X.; Qu, J.; Gong, F.; Han, Y.; Qiu, Y.; Wang, J.; Liu Y.; Wei, Y (2020).Epidemiological and Clinical Characteristics of 99 Cases of 2019 Novel Coronavirus Pneumonia in Wuhan, China: A Descriptive study.*Lancet*, 395(10223), 507-513.

Chen, Zhou,Huang ,Wang (2020).Further Evidence from Hospitalized Coronavirus Patients in Wuhan, China. A Descriptive study.*Lancet*,395(10223), 507-514.

Erika.C and Nicholas A.C (2020) *The Atlantic*

<https://www.google.ca/amp/s/amp.theatlantic.com/amp/article/608056/>

Guan, W.J.; Ni, Z.Y.; Hu, Y.; Liang, W.H.; Ou, C.Q.; He, J.X.; Liu, L.; Shan, H.; Lei, C.L.; Hui, D.S.(2020). Clinical Characteristics of 2019 Novel.*England Journal of Medicine* 382(18) DOI:10.1056/NEJMoa2002032

Madeline.W (2020). Education Week; *It's Teacher Appreciation Week. See How 3 Educators Are Helping Students During COVID-19*.<https://www.edweek.org/teaching-learning/its-teacher-appreciation-week-see-how-3-educators-are-helping-students-during-covid-19/2020/05>

Onyema, E.M., & Deborah, E. C. (2019). Potentials of Mobile Technologies in Enhancing the Effectiveness of Inquiry-based learning. *International Journal of Education (IJE)*, 2(1), 1–25. <https://doi.org/10.5121/IJE.2019.1421>

Oreopoulos, P,T.; Wachter, V.; Heisz, A. The Short- and Long-Term Career Effects of Graduating in a Recession(2012). *American Economic Journal: Applied Economics*,4(1), 1-29.

Tom Allard, Kate Lamb (2020). "*Exclusive: More than 2,200 Indonesians have died with coronavirus symptoms, data shows*".<https://www.google.ca/amp/s/mobile.reuters.com/article/amp/idUSKC N22A04N>

UNESCO (2020) Adverse consequences of school closures(n.d)

website:<https://en.unesco.org/covid19/educationresponse/consequences>

UNESCO (2020) COVID-19 Educational Disruption and Response. Retrieved Nov, 10, 2020, from UNESCO.org website: <https://en.unesco.org/news/covid-19-educational-disruption-and-response>.

Wang, D.; Hu, B.; Hu, C.; Zhu, F.; Liu, X.; Zhang, J.; Wang, B.; Xiang, H.; Cheng, Z.; Xiong, Y. (2020). *Clinical Characteristics of 138 Hospitalized*<https://jamanetwork.com/journals/jama/fullarticle/2761044>

WHO(2020) *Data as received by WHO from national authorities, as of 11 October 2020, 10 am CEST*-- <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20201012-weekly-epi-update-9.pdf>

Yang, Y.; Lu, Q; Liu, M.; Wang, Y.; Zhang, A.; Jalali, N.; Dean, N.; Longini, I.; Halloran, M.E.; Xu, B.(2020). Epidemiological and Clinical Features of the 2019 Novel Coronavirus Outbreak in China.