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SARS-COV-2 PANDEMIC ON THE NIGERIAN EDUCATIONAL SYSTEM

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ABSTRACT

The Covid-19 pandemic has resulted in over 5million confirmed cases and over 300,000 moralities globally. Deteriorating the global economic, financial, and educational climate. Social distancing, self-isolation, and temporarily lockdown across the economic sector as measures to cushion the virus spared led to a decrease in the domestic workforce, revealing the shortfalls in the educational and health sectors. The shift from the conservative classroom learning to electronic learning (E-learning) globally contributed significantly to the sustainability of the educational sector during this pandemic. Evidence from Nigeria revealed a lack of infrastructures, the paucity of funds, policy issues, poor institutional preparedness for unseen eventualities like this pandemic among other factors thwart the smooth shift in Nigeria. It is in tandem with these prevailing issues that this study examines SARS-CoV-2 on the Nigerian educational system. Findings show the government's positive efforts and support for online learning at the primary and secondary school levels. In contrast, online learning in government colleges, universities, and the rural communities is a mirage in Nigeria. Three in five students lack access to online education. The study recommends among other things; creative handling of public universities and colleges administration towards ICT adoption and online learning implementation. Development of educational policies and social infrastructures to drive the sector during an unforeseen crisis such as this pandemic, and a review of

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budgetary allocation to the educational sector to meet the UNESCO standard of 15-20% of annual the budget.

Key words: COVID-19; School Closure, Pandemic, Education, Nigerian Universities

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1. INTRODUCTION

SARS-CoV virus is a "Severe Acute Respiratory Syndrome Coronavirus" found in Guangdong province of southern China in 2002, alleged to be an animal virus from an undefined animal reservoir. Preceding studies argued that SARS-CoV and Middle East Respiratory Syndrome (MERS-CoV) infections spread from "civet cats and dromedary camels" to humans, respectively. Guangdong province in 2003 reported the first human infection case. The SARS epidemic affected 26 countries accounting for 8000 confirmed cases and a 9% mortality rate in Toronto, Hong Kong Special Administrative Region of China, Chinese Taipei, Singapore, and Hanoi in Viet Nam (World Health Organisation WHO, 2003). The SARS-CoV epidemic ended in July 2003 and reappeared four times – three times from laboratory accidents in Singapore and Chinese Taipei, and once in Southern China (WHO, 2003). The SARS-CoV reappeared in Wuhan Province of China in December 2019. The International Committee on Taxonomy of Viruses officially referred to it as "Severe Acute Respiratory Syndrome Coronavirus 2" (SARS-CoV-2) (WHO, 2020a).

The WHO on February 11, 2020, named this disease "Coronavirus Disease 2019", abbreviated as "COVID-19". On February 14, 2020, Egypt recorded Africa's first COVID-19 case, since then it has spread so rapidly across the 54 African countries. Lagos Nigeria reported its first case on February 27, 2020, spreading across the 36 states and the federal capital territory Abuja. Transmission of SARS-CoV2 is primarily from person to person through respiratory droplets of an infected person. The reservoir remains undefined notwithstanding incidental evidence of animal-to-human transmission. The spread of MERS-CoV, SARS-CoV and the novel SARS-CoV-2 is between humans and they are highly contagious, on the other hand, the animal CoV is hardly transmitted to humans (WHO, 2020b).

The detrimental effect of SARS-CoV-2 on the educational and healthcare systems are in various magnitudes in more than 200 countries and territories, with over 5 million confirmed cases, over 300,000 mortalities, and over 3.3 million infections, since its inception and still counting (WHO, 2020c). The economic, social, and business costs are unprecedented on several fronts of a geometric decline in crude oil prices to as low as US$17 per barrel, stock valuations for the NSE-ASI, Nikkei, Dow Jones, and FTSE-100 declined by an average of 23.8% between January and March 2020, the aviation sector globally lost about US$252 billion in revenues and across the broad range of industries from hospitality to services, still counting.

These ravaging outcomes are expectedly thrown the global economy into a risk of 80% economic and financial recession, compliance challenges in certain sectors, a decline in sales, consumers' confidence and consumption by 48%, decrease in the 2019 global growth rate of 2.9%, and the 3.3% projected growth rate of 2020. The Economic Community of West African States (ECOWAS) Commission (2020), observed a negative impact of the virus spread on commodity prices which are exogenously influenced.

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Similarly, the Central Bank of Nigeria (CBN) (2020) accredited the dwindling global output performance to culminated in losses in the global stock values, decline in prices of commodities, and global supply chain disruptions. Theoretically, prices of products and services are not only cyclically sensitive to external and internal shocks, civil unrest but also to political and health shocks such as the Covid-19 pandemic disrupting aggregate demand and supply globally (Vijlder, 2020; Hunter, Kim & Rubin, 2020). Also plummeting drown the global business activity index to 19, suggesting a 31point drop in recent months. The ripple and trajectory effect on the global product supply chains, energy, oil and gas, manufacturing, and service sectors of health, among others lead to its declaration by the World Health Organisation (WHO) as a global pandemic on March 11, 2020 (Sohrabi, Alsafi, O'Neill, Khan, Kerwan, & Al-Jabir, 2020; Cui, Li & Shi, 2019; Lai, Shih, Ko, Tang & Hsueh, 2019).

In a bid to mitigate the trajectory effect, and respond to the spread, nations have moved away from multilateralism to a response by fighting for themselves with a quantum of measures to protect their citizens and economies, regardless of the spillover effects on the rest of the world. A total of 32 countries and territories, still counting adopted and implemented stringent measures through immediate lockdowns, restrictions of movement, social and physical distancing measures, as well as public health measures. On March 18, 2020, the Nigerian government issued a travel ban and suspended visa on arrival for all travelers returning from countries with over 1,000 cases of COVID-19. On 7 June 2020, all commercial flights to and from Nigeria were suspended, except essential and emergency flights. A total lockdown across economic sectors was announced on March 30, 2020, in Abuja and Lagos, as the cities recording the highest number of cases and later extended to other parts of the country following the daily geometric increase in the number of confirmed cases.

On the other hand, WHO argued that the number of unreported cases in Nigeria and Africa is most likely higher than the reported cases, given the deficiency in the health sector, underfunding, limited infrastructure, and Covid-19 testing kits (WHO, 2020). Such is evident in the 2018 health sector budget of 3.9% and a marginal increase of 4.5% in 2020 falls short of the 2001 commitment under the Abuja Declaration of 15% allocation. The physician to patient ratio in Nigeria is at 1 physician to 2,500 patients in a country with an estimated population of 200 million. This ratio contravenes the WHO ratio of I physician to 1,000 patients, by implication Nigeria has less than half of the required physician to respond effectively and efficiently in a non-crisis situation.

The educational sector is the focus of this study and the social service sector greatly affected by the COVID-19 pandemic ravaging the world. The effect is also evident in the temporary closure of the educational facilities in Nigeria, to contain the spread of this virus. Globally about 1 billion students in pre-primary, primary, secondary, colleges, and universities are affected by the temporary closure of educational, training, and research institutions representing 91.2% of learners globally. In 188 countries affecting more than 1.5 billion students representing 79.6% of the total learners (UNESCO, 2020). In Nigeria before the outbreak of Covid-19 “1 in every 5” out-of-school children globally is a Nigerian, about 10.5million school-age children of 5-14 are out of school, 61% of age 6-11years attend school regularly, and only 35.6% of age 36-59 months receive early childhood education. School closure caused by Covid-19 affected 39,440,016 learners of which 2,020,668 are Pre-Primary pupils, 25,591,181 primary school pupils, 10,314,796 secondary school students and 1,513,371 university students (UNESCO, 2020).

The decision to halt the academic calendar by the federal government and other sub-national’s government surprises stakeholders in the educational sector as many of these stakeholders and institutions were not prepared for the sudden disruption. The disruption is a

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step in the right direction given the widespread and highly contagious feature of this virus. The devastating effect of COVID-19 on the educational system and the student population globally led to the remodeling of the educational sector from the conventional classroom learning to E-learning, restructuring application processes, and stimulating crisis management strategies. The significant impact of e-education and distance learning as a result of the COVID-19 outbreak cannot be overemphasized (Adeoye, Adanikin, & Adanikin, 2020).

The sporadic pace of ICT adoption and application in advanced countries such as Japan is evident in the conduct of a virtual convocation ceremony using robotics (Kacerauskas & Kusaityte, 2020).

In the USA, schools deliver their educational content through online and other electronic media (Reich et al., 2020). The E-learning platforms of Zoom, Microsoft teams, google hangout (meet), skype, Bamboo learning, google classroom, Docebo, WIZIQ, Adobe captivate, Elucidat, Blackboard allow universities, and educators upload their coursework and course contents for students quarantining at home to access and don't miss out on key aspects of their educational progression. On the other hand, a handful of the world's education is taught online.

Developed countries of Canada, the United Kingdom, and the United States among others have experienced a decline in their educational revenue as a result of the trajectory effect of Covid-19 on foreign and domestic students either vacating their studies or otherwise. Eduventure (2019) cited in Adeoye, Adanikin, and Adanikin, (2020) observed that 15% of the total undergraduate students in the United States of America, enrolled for online learning and distance learning. Harvard university embraced e-learning platforms. In Asian and European countries online, television and radio learning platforms play a vital role in mitigating the trajectory effect of Covid-19 on the student's educational performance.

On the contrary, in most African countries such as Nigeria, ICT adoption is still at the rudimentary stage and the traditional forms (physical contact) of learning are the norms. Regardless of the vast benefits associated with e-learning platforms available, most Nigerian universities are yet to embrace it. Empirical studies accredit the lack of adoption to poor educational budget, lack of social welfare programs, lack of ICT infrastructures among others. The educational sector in Nigeria falls below the UNESCO standard of 15-20%. Table 1 below shows eleven years (2010-2020) budgetary allocation to the Nigerian educational sector.

Table 1 Nigerian Budgetary Allocation to Education (2010 - 2020)

Year	Budget (₦Trillion)	Educational Allocation (₦ Billion)	Percentage of Budget (%)
2010	5.160	249.09	4.83
2011	4.972	306.30	6.16
2012	4.877	400.15	8.20
2013	4.987	426.53	8.55
2014	4.962	493.00	9.94
2015	5.068	392.20	7.74
2016	6.061	369.60	6.10
2017	7.444	550.00	7.38
2018	8.612	605.80	7.03
2019	8.830	620.50	7.03
2020	10.33	691.07	6.7

Source: Federal Ministry of Education report (2020)

Corruption, nepotism, unpreparedness among other factors affect the adoption, introduction, and integration of e-learning into the Nigerian educational system during the

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global pandemic of COVID 19. The adoption and implementation rate of various e-learning platforms amidst the lockdown of schools is high among private intuitions avoiding a total distortion of their academic calendar. Unfortunately, most public universities in Nigeria fail to adopt e-learning to the detriment of their students and society at large. This study focuses on the educational sphere of Nigeria, precisely, addressing factors mitigating against effective and efficient adoption of e-learning and the possible opportunities that could change and advance the current educational scenario.

This study departs from the extant studies on the Covid-19 on, *inter alia*: the nexus between Covid-19 and oil price crash (Albulescu, 2020), analyzing the information-rich wheat markets at the early phase of Covid-19 (Vercammen, 2020); anticipating the impact of the Covid-19 on country-specific trade in commodities (Barichello, 2020) and farmland markets (Lawley, 2020), the impact of Covid-19 on nexuses between crude oil and agricultural futures (Wang et al., 2020), COVID-19 pandemic and economic crisis: the Nigerian experience and structural causes (Ozili,2020), COVID-19 in Africa: socio-economic impact, policy response and opportunities (Ozili,2020), socio-economic implications of the coronavirus pandemic (COVID-19) (Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabird, Iosifidis, Agha & Agha (2020).

2. REVIEW OF LITERATURE

The devastating and trajectory effect of COVID-19 on the educational sector is the fundamental focus of this study. The educational sector is the fulcrum of human capital development. The outbreak triggered an unprecedented shock on the global academic calendar. Measures adopted to contain the pandemic are indispensable, they however pose adverse impacts on the educational sector development. According to UNESCO estimates about 1 billion learners have been affected by the closure of educational institutions (Fig. 1) (UNESCO, 2020).

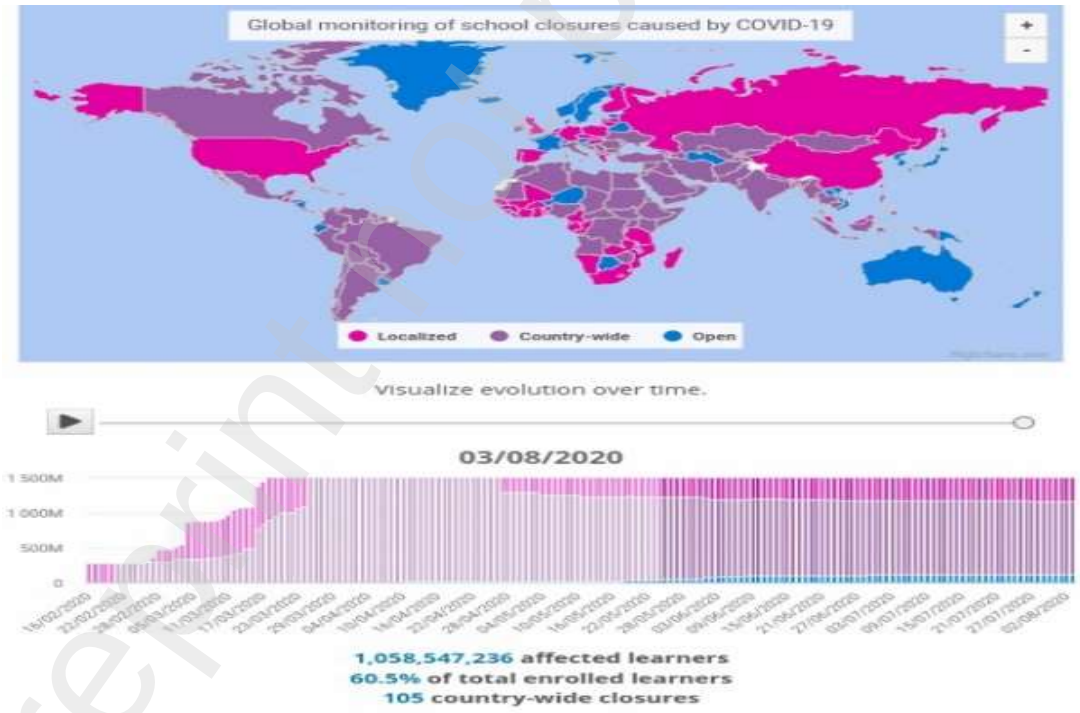

Figure 1

Source: WHO (2020)

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In Nigeria, UNESCO estimates that about 39 thousand learners have been affected by the closure of educational institutions (Fig. 2) (UNESCO, 2020).

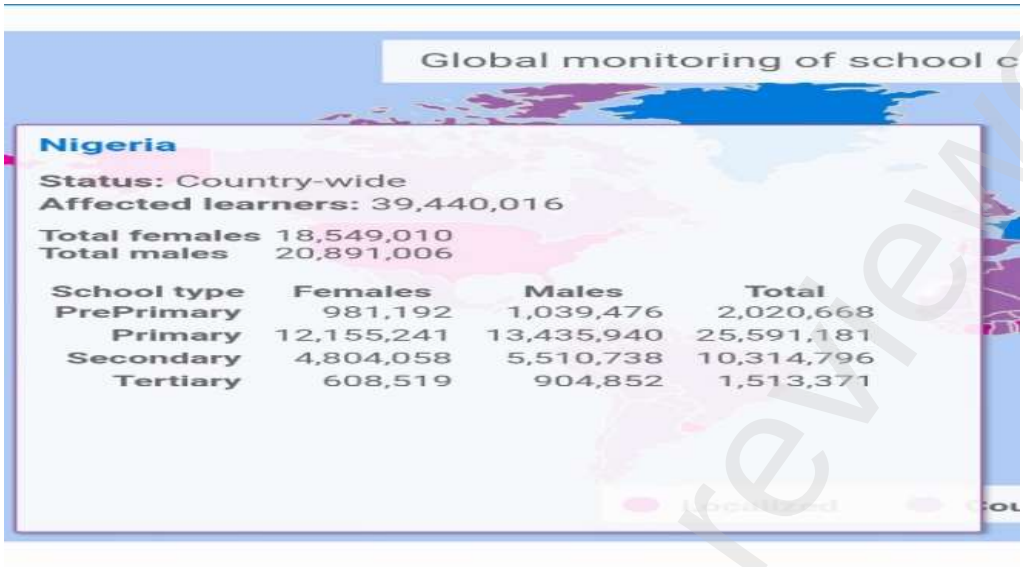

Figure 2

Source: WHO (2020)

The Nigerian educational system is greatly challenged in the face of this global pandemic despite the educational and social benefits accrued to e-learning. E-learning denotes a computerized learning method embracing an interactive interface at the convenience of both the learners and lecturers. The benefits of e-learning include better content delivery, interactivity, quality content delivery, and confidence of both learners and lecturers in the educational sector. Despite the advantages of e-learning, its adoption is still at the infancy stage in Nigeria.

Currently, the Nigerian government, National University Commission (NUC) among other regulatory and supervisory bodies, has to fail approved or permitted universities to award online degrees. Such a change would reshape education delivery within the country. The Nigerian Internet structure isn't ready for the standard shift to E-learning. Among the sub-Saharan African countries, Nigeria has the largest population estimated at 200 million in 2020. The education accessibility rate in Nigeria stood at a very low rate of 20.1%, along with 10.5million out-of-school children (60% girls and 40% boys) the highest in the World. The temporary closure of schools in response to the COVID-19 pandemic revealed copious issues affecting access to quality education in Nigeria.

However, Chen et al. (2011) cited in Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabird, Iosifidis, Agha, and Agha (2020) examined a one-week closure of schools in Taiwan during the 2009 H1N1 outbreak and found that 27% of families could not go to work with 18% losing income as a direct result. A study by the Brookings Institution, modeling closures in major US cities and nationwide, suggested that there would be a median cost of $142 per student, per week. This led to an estimate that a four-week closure of New York City would result in an economic cost of $1.1bn and that a nationwide closure for 12 weeks would cost 1% of GDP (Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabird, Iosifidis, Agha & Agha, 2020).

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3. CHALLENGES AFFECTING THE E-LEARNING SYSTEM DURING LOCKDOWN

E-learning is the only medium available for learning during this pandemic but it is confronted with a lot of challenges, some of which are discussed below. The education sector must be taken seriously and overall growth is required to fight with this type of pandemic in the future.

3.1. Internet Connectivity

E-learning in Nigeria is affected by the high cost of internet data services and accessibility. Poor internet connectivity by network providers hampers effective interaction between the students and the lecturers. The high cost of a personal computer (PC) and Laptop is a major challenge in Nigeria considering the income level of an average employee in the country. Privileged students having access to PC/Laptops are not connected to the internet as this attracts extra cost which they cannot afford. The low attendance rate of students during the online classes can be attributed to poor internet connectivity, a high rate of extreme and moderate poverty in the country. Most families and students cannot afford the basic social needs of food and clean water let alone the expensive gadgets or resources to enhance their online learning. According to the International Telecommunications Union (Geneva), there are 3.5 billion mobile internet subscribers globally representing 47% of the world population. In Africa, mobile internet penetration stood at 39.3%, while internet users stood at 4,514,400 of the total estimated population of 1,340,598,447. Internet growth from 2000-2020 stood at 11,567%. In Sub-Saharan Africa, mobile internet adoption stood at 24% of the global population, on the other hand, the region also accounts for 40% of the global population not covered by a mobile broadband network.

In Nigeria, 61.2% of the estimated 200 million populations in 2020 have access to internet facility, with a growth rate of 62,939% from 2000-2020. According to the 2017-'18 National Sample Survey report on education, only 49.6% of Nigerian households have an internet facility. While 78.7% of the total population is resident in rural areas, only a little over 10.8% of rural households have access to internet services. For urban households, the proportion is 38.8%. Similarly, the incapability of lecturers to assists learners develop the skills and training required for effective e-learning posed yet another challenge. E-learning creates an atmosphere for the complete absence of physical interactions between the students and lecturers.

3.2. Power Supply

The epileptic power supply in Nigeria especially in rural areas significantly disconnects student's residents in these areas from accessing the internet facilities and utilizing the e-learning platform effectively. Energy sufficiency in Nigeria is a mirage characterized by chronic power scarcities and meager quality supply. Nigeria's total population is estimated at 200 million of which 40-45.5% of urban dwellers access electricity at a very high cost and only 20-25% of those in rural areas. On the other hand, about 55-60% of the rural populace are cut off the national grid (Figure 3).

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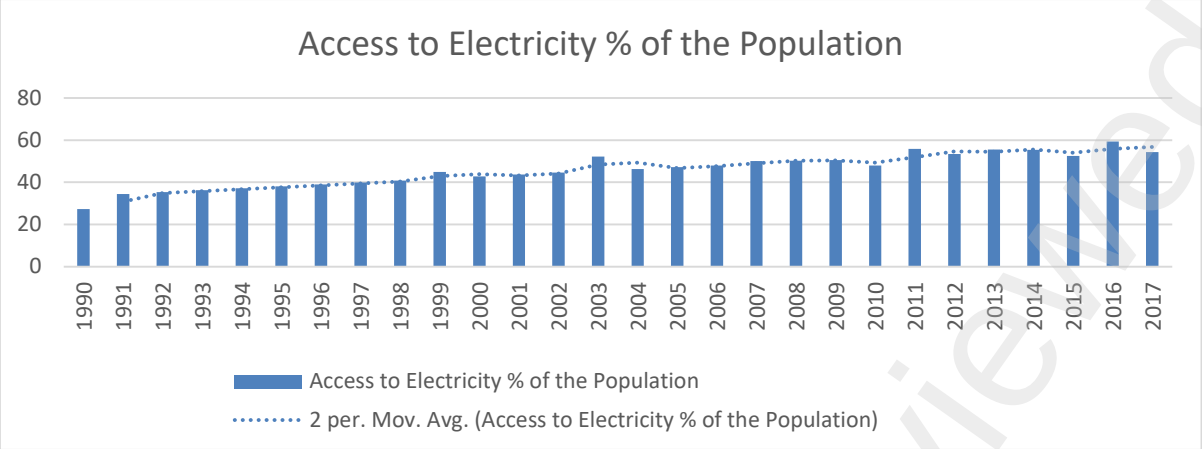

Figure 3 Access to Electricity (% of the Population)

Source: *Computed from World Development Indicator Database (2019)*

Energy consumption and provision in Nigeria from 1980-2019 have been on a constant fluctuation between 2%-4.0% respectively (NBS, 2018). In 2017, primary energy consumption in Nigeria stood at 1.54 Quadrillion Btu. The shortage in electricity supply and the estimated billing system currently in use in Nigeria has forced consumers to depend solely on generator (petrol or diesel) As an alternative source of energy which has also affected the effective utilization of the e-learning platform. Most families cannot afford a generating set given its high purchase cost and government embargo on the importation of generators into Nigeria.

3.3. Opportunities Applicable to the use of e-Learning

Regardless of the experience by students and lecturers in the process of integrating and embracing the e-learning system, it has become the most preferred platform for social gathering, learning, interaction among others during these global pandemic periods of COVID-19 where the movement of goods and service is restricted and institutions of learning are on lockdown. The e-learning system will not only enhance secondary and university education, it will be of great benefit to primary school pupils exposing them to contemporary educational technology and lecturers alike easing access to a large amount of information within the global village.

The adoption and development of e-learning facilities will contribute immensely to easing and filling the gap created by inadequate and insufficient educational facilities such as class space for lectures, clash in the timetable, or overpopulated students. E-learning provides students and lecturers comfort to participate effectively and efficiently in educational activities compared to the traditional educational method where sometimes these basic amenities are unavailable for conducive learning.

This is substantiated by the findings of Mengistie (2020) in Ethiopia, Reich et al., (2020) in the USA, and Pingle (2011) in India that undergraduates have a higher acceptance level of comfort working with computers and other e-learning packages than the traditional face-to-face classroom. E-learning has been proven to be cost-effective in reducing travel time, infrastructural development, and maintenance in terms of buildings (Arkorful & Abaidoo, 2014). E-learning and student training are cost-effective compared to physical (face-to-face) class contact content development, distribution, and maintenance (Guragain, 2016). These show that the adoption of e-learning tends to solve educational challenges in Nigeria especially at this a time of the COVID-19 pandemic.

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4. CONCLUSION AND RECOMMENDATION

The contemporary model of delivering educational content through radio, television, and other media outlets by the Nigerian government in a situation of complete lockdown is somehow encouraging for some levels like the primary and secondary schools. On the contrary, six months counting and still counting, public colleges and tertiary intuitions in Nigeria are without alternative learning platforms. The rural dwellers are technically disadvantaged due to the general and peculiar challenges of; irregular power supply, high internet subscription costs, digital technology and mismanagement of technological provision in colleges and tertiary institutions, poor internet access amongst other factors.

The applicable opportunities associated with embracing e-learning include lecturer's /learners' convenience, exposure, and cost benefits. This study recommends among other things; government firm handling of public universities and colleges administration towards the adoption of ICT and e-learning, private universities should be proactive in ameliorating the challenges identified and build on the opportunities e-learning for post-COVID-19, effective and efficient government policies that will sustain workable social infrastructures during an unforeseen crisis such as this pandemic. Finally, the Nigerian budgetary allocation to education should be upgraded to meet the UNESCO standard of 15-20% of the budget.

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