

# Managing the Impact of Covid-19 on Education System

Iwowari Beatrice Dute

*Department of English and Literary Studies, Niger-Delta University*

**Abstract:** This study empirically ascertained the impact of COVID-19 on education and recommended initiatives that could be adopted in managing the impact. Four null hypotheses were formulated to guide the study. The study adopted a survey design. Self-prepared questionnaires were administered to 120 respondents that comprised of educators, students, parents and policy makers selected from different States in Nigeria. The questionnaires were administered online using online survey platform. Also, secondary data were generated from newspapers, journals, media and reports. From the collected data, multiple regression analysis was adopted in testing the null hypotheses using SPSS. From the results, all the null hypotheses were rejected except null hypothesis four. Thus, this paper recommends online learning as the best initiative in managing the impact of COVID-19 on education system in Nigeria.

**Keywords:** COVID-19, Education system, E-learning, Nigeria.

## I. INTRODUCTION

History has it that there have been several outbreaks that affected the world at several times and in many ways but the corona virus appears to be of a more adverse effect on both developed and under developed nations of the world. Its effect on the world has been felt across all sectors causing a decline in economies of nations all over the world. Zhong, Luo, Li, Zhang, Liu and Li (2020) had it that the corona virus disease (COVID-19) is an infection resulting from a novel severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). He added that an infection for example, the novel severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) known in 2002 and 2012 in that order were as a result of viruses analogous to SARS-CoV-2. Nevertheless, SARS-CoV-2 has a higher range more the earlier information related to viruses and as a result the obscurity in the cure and management of COVID-19 (Zhong *et al.*, 2020). The author also stated that therapeutic diagnosis and findings have shown that people tainted with COVID-19 can be symptomatic or asymptomatic in the premature stages of the virus depending on each person immune system. And that the signs of the infection contain dry cough, fever and tiredness, shortness of breath, headache and general body weakness owed to the incentive of supplementary pains in the body.

The disease was observed to move from persons to persons through hand touch, inhaling the same air of a victim of the disease etc. making it highly contagious and it did spread rapidly across the globe leading to the deaths of thousands of lives and a halt in economic operations. With no foreseeable

antidote and prescribed treatment to the virus, measures were taken to curtail the spread of the virus of which included the use of the initiative termed “Lock Down”. This approach was initiated to minimize the spread of the virus through human to human contact thereby restricting the movement of humans either on air, land or water.

This brought about a halt in almost all operations in several sectors ranging from banking and finance, manufacturing, distributions and the educational sector inclusive. The latter being the educational sector is the subject of the study, specifically as it relates to developing nations like Nigeria.

According to UNESCO (2020), at the end of April 2020, educational institutions shut down in 186 countries, affecting approximately 74% of total enrolled learners on the planet. Reimers and Schleicher (2020) added that in several countries, schools have been closed since the beginning of March 2020, while in others (e.g. most of China and South Korea) in-person classes had been already cancelled since January 2020. Several countries (e.g. Malta, Portugal, Ireland) have announced that (parts of) the formal education system will not re-open this academic year, whereas in others (e.g. Denmark, Germany, France, Greece, Poland) (parts of) the formal education system have progressively re-opened in April/May to facilitate assessment and certification, depending on medical advice for de-confinement.

Similarly, a report by Anifowoshe, Aborode, Ayodele, Iretiayo and David (2020) asserted that the corona virus deadly disease has revealed the lack of preparation of a lot of higher education institutions in Africa particularly developing nations to roam online. The authors further added that when the virus first hit the continent, many Sub-Sahara African country governments were moving quickly to discover the most effective and efficient way to curb its devastating socio-economic impacts. Countless of Sub-Sahara African have had to momentarily shut down educational institutions in an effort to curtail the multiplicity of COVID-19 in their individual countries. Egypt was reported to be the first African country to account for a case of COVID-19. Since then, Africa has accounted for more than 270,000 cases with over 7,000 deaths and over 121,000 recoveries. As at the time this study was conducted, several other studies have been conducted as well regarding COVID-19, the impact on nations’ economics, the extent of the damage caused by the virus etc. However, little attention has been given to managing the impact the virus has had on several sectors e.g. health sector, production and

distribution, finance, etc. It is on this backdrop that this study looked beyond the negative impact that the pandemic has caused the world and aimed at broadening the frontiers of knowledge regarding COVID-19 and managing the impact it has had on the educational sector, particularly in Nigeria.

In the light of this, the United Nations (2020) reported that the COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion scholars in over 190 nations and in every continent. Their report also stated that closures of schools and other learning spaces have impacted 94 per cent of the world's student population, up to 99 per cent in low and lower-middle income countries and that the crisis is exacerbating pre-existing education disparities by reducing the opportunities for many of the most less privileged kids, young adults – individuals residing in low cost areas, female children, internally displaced people, individuals having physical disabilities and other vulnerable and less privileged people – to continue their learning.

United Nations (2020) also added that learning losses also threaten to extend beyond this generation and erase tens of years of progress recorded specifically in the fight for gender equality, with respect to female access to quality education. There is a high possibility that about 23.8 million additional kids and young adults (from kindergarten to tertiary) could drop out or not have access to education in the coming year as a result of the pandemic's economic effect only. Furthermore, the report asserted that the education disruption has had, and will continue to have, substantial effects beyond education. Lockdown of schools limit and restrain the provision of educational and associated services to kids and the host communities, including the provision of good food, the negative impact on a lot of guardians and parents with respect to their ability to work from home, and elevated threats of maltreatment against the female gender. As economic and financial hardships elevate, and foreign aid drops drastically, the funding of education is most likely to face huge difficulties, compounding the already widened pre-COVID-19 educational financing gaps. For low income countries and lower-middle-income countries, for instance, that gap had reached a staggering \$148 billion annually and it could now increase by up to one-third (United Nations, 2020). According to United Nations (2020) also, the COVID-19 crisis and the unparalleled education disruption are far from over. Over hundred nations globally are yet to indicate their convictions towards the reopening of institutions and this has left guardians, parents, students and other stakeholders confused on what the next steps are. These issues highlighted above are a concern to researchers and this study addressed the issues empirically.

Thus, the study was aimed at empirically ascertaining the impact of COVID-19 on education with the aim of proffering initiatives that could be adopted in managing the impact. Meanwhile, specific objective included:

- i. To ascertain whether online education is an admissible initiative that can curtail the impact of COVID-19 on education (learning disruption, dropout/loss of interest, prolonged study and limited educational opportunities) in Nigeria.

The study formulated the following null hypothesis to help guide the study:

- $H_{01}$ : Online Education does not significantly impact on learning disruption.
- $H_{02}$ : Online Education does not significantly impact on dropout/loss of interest
- $H_{03}$ : Online Education does not significantly impact on prolonged study
- $H_{04}$ : Online Education does not significantly impact on limited educational opportunities.

The findings from this study, which present the perspectives of managing the impact of COVID-19 on education in Nigeria, are foreseen to assist in the restart of educational activities, the restructuring of educational policies, and the further organization of online learning so that the methods to be implemented have positive and long-term effects for both students and educational institutions. Therefore, these findings can be of great value to policymakers, educational leaders, teachers/lecturers and students as well as parents. The findings and practical implications of this study can also greatly benefit health professionals and school psychologists, who can provide emotional support, increased motivation, improved attitudes toward learning in a changed environment, and support the advancement of knowledge of sustainable educational skills of each beneficiary of the education system. Furthermore, the findings of this study can serve as a reference point for future studies regarding COVID-19 and education, particularly relating to those countries with low and medium economic development like Nigeria.

In the next section, this paper reviewed key concepts as well as other related studies.

## II. LITERATURE REVIEW

### *The Concept of Corona Virus (COVID-19)*

Corona viruses are positive-sense RNA viruses having an extensive and promiscuous wide range of natural hosts and affect multiple systems (Weiss and Leibowitz, 2011 and Li, Fan, Lai, Han, Li, Zhou, Pan, Wang, Hu, Liu, Zhang and Wu, 2020). According to Lu, Zhao, Li, Niu, Yang, Wu, Wang, Song, Huang, Zhu, Bi, Ma, Zhan, Wang, Hu, Zhou, Hu, Zhou, Zhao, Chen, Meng, Wang, Lin, Yuan, Xie, Ma, Liu, Wang, Xu, Holmes, Gao, Wu, Chen, Shi and Tan (2020) and Cheng, Wong, To, Ho and Yuen (2020), corona virus can cause clinical diseases in humans that may extend from the common cold to more severe respiratory diseases like SARS and MERS. The recently emerged SARS-CoV-2 led to catastrophes in China, and a global pandemic situation, which is yet to be controlled till date, despite all the huge efforts

being put in place to counter the virus. Before this time, the WHO named this virus as a 2019-novel corona virus (2019-nCoV) and later as COVID-19 (WHO, 2020). Later, this virus was designated/named as “severe acute respiratory syndrome corona virus 2” (SARS-CoV-2) by the International Committee on Taxonomy of Viruses (ICTV). Coronaviridae Study Group ascertained that the virus belongs to the existing species of severe acute respiratory syndrome-related coronavirus, and found that the virus is related to SARS-CoVs (Gorbalenya, Baker, Baric, de Groot, Drosten, Gulyaeva, Haagmans, Lauber, Leontovich, Neuman and Penzar, 2020). The SARS-CoV-2 is a member of the order Nidovirales, family Coronaviridae, sub-family Orthocoronavirinae, which is sub-divided into four genera, viz. Alphacoronavirus, Betacoronavirus, Gammacoronavirus, and Deltacoronavirus (Zhong *et al.*, 2020; Chen, Liu and Guo, 2020). The genera Alphacoronavirus and Betacoronavirus originate from bats, while the Gammacoronavirus and Deltacoronavirus have evolved from birds and swine gene pools (Li, Fan, Lai, Han, Li, Zhou, Pan, Wang, Hu, Liu, Zhang and Wu, 2020; Lai and Holmes, 2001; Woo, Lau, Lam, Lau, Tsang, Lau, Bai, Teng, Tsang, Wang, Zheng, Chan and Yuen, 2012 and Cheng, Lau, Woo and Yuen, 2007).

#### *The Concept of Online Education*

The corona virus pandemic has compelled the world to have a rethink on how things should work. In the educational sector where face to face learning is the predominant learning method, a relatively new strategy ‘online education’ has been largely considered a best fit option for learning since the pandemic has resulted in a shutdown of all activities especially in places that allows for mass gathering. The online education initiative has been in operation before now but practiced by few teachers and learners. Majority of the public owned institutions still makes use of the face to face learning method up until the outbreak. The outbreak of the virus has now made public owned schools to consider and adopt massively the use of online education.

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 space (Onlineeducation.com, 2020).

Onyema and Deborah (2019) added that 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. And that 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.

Therefore, the integration of technology into the classroom has been widely promoted and supported around the world

(Cope and Ward, 2002). Also, the success of online learning and change management has been shown to be impacted on by the manner in which lectures are given and how explicit they are, by the availability of facilities, schedule, by motivation, and by support for being part of the online learning (Ibrahim, Al-Kaabi and El-Zaatari, 2013).

The impacts of the utilization of technology in schools have been researched on in the past in the field of education, which have proven and disclosed that technology can assist in various educational processes (Hung and Yyen, 2010), have a positive impact on student learning support (Dyson, Vickers, Turtle, Cowan and Tassone, 2015), and help teachers toward professional advancement and development (Manca and Raineri, 2017; Donelan, 2016).

However, Honey, Culp and Carrigg (2000) holds that previous studies that aimed to identify the factors influencing the opportunities of educational systems in the integration of technology into teaching suggested that, in order to achieve positive results in the incorporation of teaching technology, it is significant to comprehend the classes of interactions that exist among teachers, students, and technology.

#### *The Impact of COVID-19 on Education (The Nigerian Situations)*

The corona virus was a global pandemic that disrupted the entire world’s operations with developing nations at the heart of it. Although as at January 2020, Nigeria was one of the developing nations with no record of an infected person but weeks after, precisely by 28<sup>th</sup> February, there was a record of a first case who was a Nigerian UK returnee. And by the month of April the number of cases has risen to over 343 confirmed cases, 91 recoveries and 10 deaths and this became a pressing cause for concern. Following this development, the Federal Ministry of Education announced a temporary close down of all schools in Nigeria with effect from March 23<sup>rd</sup> as a precautionary measure to curtail the spread of the virus.

This directive was commendable because at the time, saving the lives of her citizens became a priority to the Nigerian Government. However, this decision impacted on students, teachers and parents negatively. All form of learning process was halted, tertiary institution students went back homes and these eventually created a delay in the progress of the students and also disengaged teachers from their responsibilities, as prior to this time, there was little or no preparations to accommodate distant learning. Only very few private institutions could boast of having the necessary equipment to support online learning. As such, public owned school students suffered adversely as they were denied access to face to face learning, which is the prevailing learning method in the country.

#### *International Efforts to Manage the Impact of Covid-19 on School Education*

Several countries particularly developed nations have adopted a range of initiatives/approach to respond to the pandemic

depending on the available resources. For example, nations that are technologically advanced, like the G8 nations, have utilised unconventional learning to make up for the loss. These countries quickly enhanced their e-learning platforms (Moodle, LMS, cloud systems, etc.) to create common distance learning centre portals and provided students access to e-content and repository through mobile devices. In these countries also, all stakeholders, institutions, teachers, publishers, and parents have joined hands together to create digital resources (e.g., textbooks and learning materials) so that they could be delivered through virtual classrooms (Azzi-Huck and Shmis, 2020). Also, the two nations with the highest population on earth, China and India, have both launched country wide e-learning portals with access to the national repository of learning resources for parents, teachers, students, and education administrators. India has given opportunities to a large number of people to access thousands of complete materials in several languages. China, on the other hand, mobilized all provincial and national online platforms and telecom service providers to upgrade the bandwidth of their platforms, and mobilized the society-wide resources, both human and material, to guarantee that learning is smooth and effective when classes are in session. In addition, China has adapted flexible online teaching approaches to facilitate learning. Also, it has beefed up cyber security via the collaboration of all service providers and developed a psych-social support for guaranteeing a 100 % e-learning (Azzi-Huck and Shmis, 2020).

On the other hand, countries without adequate infrastructure particularly developing nations are turning to conventional technologies like radio and TV, as an avenue to make up for the loss. For example, in South American nations like Argentina, Chile, and Brazil, access to internet and internet connectivity is a major issue, some of these nations have used a combination of new (mobile, digital) and conventional technologies to teach and disseminate resources from a robust national coordinated education portal for students, teachers, managers, and parents. Radio, television, YouTube channels, recorded lessons and digital educational resources/materials on demand are combined together to offer lectures to students who do not have reliable access to the internet (IAU, 2020). Adopting a similar approach, Indonesia and Malaysia have mobilized all major technology providers, internet providers and TV communication outlets to synergize and offer education events in real time for students as well as teachers. In Indonesia, Education TV, 'Learning House' and Online learning System Program give access to learning resources. Together, they offer a learning management system with digital lessons, ebooks and practice assessment tools that match the educational curriculum. Likewise, Malaysia launched a new TV channel to deliver lectures via TV programs to all students, particularly those with no internet access. These programs are also live-streamed on the Ministry's online learning platform which provides access to on-demand content as well as digital textbooks (IAU, 2020).

### Conceptual Framework

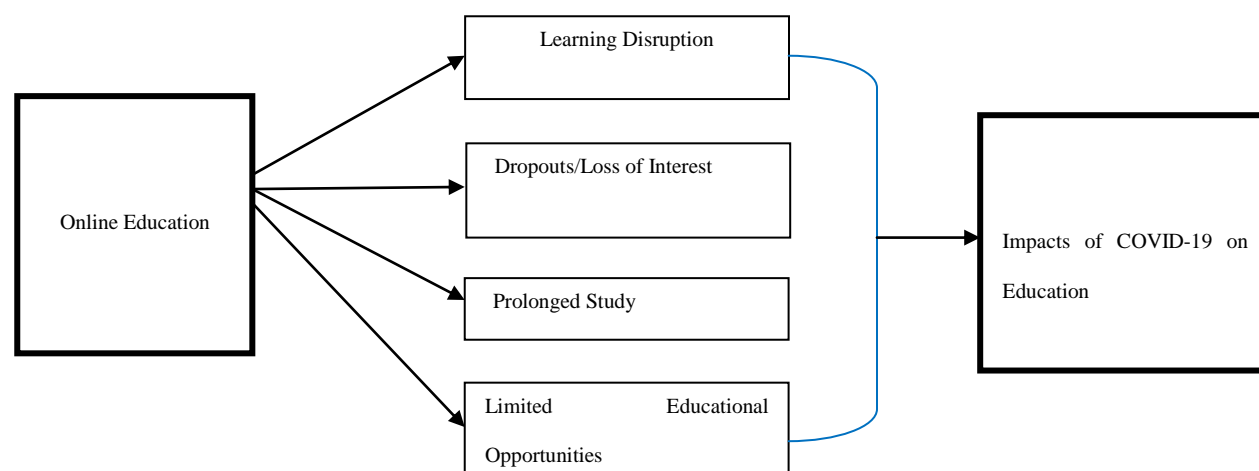


Figure 1: Conceptual Framework of the Study (Source: Researcher)

Source: Researchers Desk (2020)

In an effort to strengthen the claim of this study, reference was made to existing studies whose findings highlights the importance of face to face learning as well as the positive impact of quality learning time.

Lavy (2015) analysed the impacts of instructional time on students' performance. The data obtained from more than fifty nations with great amount of variations in hours of teaching

shows that face to face instructional time has a positive and significant effect on students' test scores.

Similarly, Carlsson, Dahl, Öckert and Rooth (2015) investigated a situation in which young men in Sweden had differing number of days to prepare for important tests. The authors stated that "an additional 10 days of school teaching increases scores on crystallized intelligence tests (synonyms

and technical comprehension tests) by approximately 1% of a standard deviation, whereas extra non-school days have almost no effect.” (p. 533). This implies that, even just 10 days of extra school learning tremendously increases scores on the tests of the use of knowledge. From the above reviews, it could be seen that these studies were conducted under normal learning conditions. Hence, the need for this study, conducted on learning during a pandemic as severe as the COVID-19.

### III. METHODOLOGY

The paper adopted a survey design. Self-prepared questionnaires were administered to 120 respondents that comprised of educators, students, parents and policy makers selected from different states in Nigeria. Due to the lockdown, the questionnaires were administered online using online survey platform. Also, secondary data were generated from newspapers, journals, media and reports during the review of literature. From the collected data, multiple regression analysis was adopted in testing the hypothesis using SPSS Version 21.

### IV. RESULTS AND DISCUSSIONS

Table 1: Demographic Information of Respondent

	Frequency	Percentages
<b>GENDER</b>		
Male	73	60.8%
Female	47	39.1%
Total	120	100%
<b>EDUCATIONAL QUALIFICATION</b>		
Undergraduates	57	47.5%
Postgraduates	41	34.1%
Others	22	18.3%
Total	120	100%
<b>DESIGNATIONS</b>		
Educators	37	30.8%
Students	72	60%
Other	11	9%
Totals	120	100%

Table 1 above depicts the distribution of respondents by gender, educational qualification and designations/title. It can be seen from the table that 60.8% of the respondents were males while 39.1% were females. This implies that majority of the respondents were males. Also, the distribution of respondents by their educational qualifications shows that 47.5% of the respondents were undergraduates, 34.1% were postgraduates while 18.3% had other certifications. Implying that majority of the respondents were undergraduates.

Furthermore, the distribution of respondents by designations reveals that 60% of the respondents were students, 30.8% were educators and others were 9% respectively. This implies that majority of the respondents were students.

### V. HYPOTHESES TESTING

In this section, the formulated null hypotheses stated earlier in this paper were tested. Therefore, to further examine the impact of online education on learning disruption, dropout/loss of interest, prolonged study and limited educational opportunities in Nigeria, the formulated null hypotheses were tested using linear regression and the estimation was facilitated by Statistical Package for Social Sciences (SPSS) 21.0 version.

A correlation coefficient of zero ( $r=0.0$ ) indicates the absence of a linear relationship and correlation coefficients of  $r=+1.0$  and  $r=-1.0$  indicate perfect linear relationship. Also, a correlation coefficient of  $r>0.50$  indicates strong degree of linear relationship while a correlation coefficient  $r<0.50$  indicates weak degree of linear relationship.

The decision rule for accepting or rejecting any of the hypotheses is stated below:

1. Reject the null hypothesis at 5% level of significance if the significant value (P-value) is less than 0.05.
2. Accept the null hypothesis at 5% level of significance if the significant value (P-value) is greater than the 0.05.

#### Regression Analysis and Interpretation:

Table 2: Summary for the R value and R Square value with the Std. Error

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.979 <sup>a</sup>	.958	.957	.251
a. Predictors: (Constant), Disrupt Learning, Dropout/Loss of Interest Prolonged Study and Limited Educational Opportunities.				

Table 2 provides the  $R$  and  $R^2$  values. The  $R$  value represents the simple correlation and is 0.979 (the "R" Column), which indicates a high degree of correlation. The  $R^2$  value (the "R Square" column) indicates how much of the total variation in the dependent variable, Education, can be explained by the independent variables i.e. Learning Disruption, Dropouts, Prolonged study, and Limited education opportunities, etc. In this case, 25.1% of the dependent variable can be explained by the independents variables.

Table 3: ANOVA Result

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	166.061	4	41.515	659.543	.000 <sup>b</sup>
	Residual	7.239	115	.063		
	Total	173.300	119			
a. Dependent Variable: Online Education						
b. Predictors: (Constant), Prolonged Study, Disrupt Learning, Limited Educational Opportunities, Dropout/Loss of Interest.						

From table 3, the Significance value is 0.000 (i.e.  $p = .000$ ), which is below 0.05 and, therefore, there is a statistically significance of online education on the predictor variables.

Table 4: Coefficient table with the P value at 95% confidence interval

Coefficients <sup>a</sup>								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		
	B	Std. Error				Beta	Lower Bound	Upper Bound
1	(Constant)	-.033	.093	-.355	.723	-.218	.152	
	Limited Educational Opportunities	.044	.025	.055	1.757	-.006	.093	
	Learning Disruption	.253	.061	.211	4.142	.000	.132	.373
	Dropout/Loss of Interest	.312	.066	.304	4.706	.000	.181	.443
	Prolonged Study	.425	.042	.473	10.176	.000	.342	.507

a. Dependent Variable: Online Education

The first column shows the predictor variables (Limited education opportunities, Learning Disruption, Dropouts/loss of interests, and prolonged study). The first variable (constant) represents the constant, also referred to the educator efficiency as the Y intercept, the height of the regression line when it crosses the Y axis. In other words, this is the predicted value of COVID-19 impact on education, when all other variables are 0. These coefficient table contains the values for the regression equation for predicting the dependent variable from the independent variables. These are also the values for 95% confidence intervals for the coefficients.

Table 5: Hypotheses Testing Comparing with the P-value

Hypothesis Number	Variable name	P.Value	Statistically Significant	Null Hypothesis Accept/Reject
H <sub>01</sub>	Learning Disruption	0.000	Statistically significant	Reject
H <sub>02</sub>	Dropout/Loss of Interest	0.000	Statistically significant	Reject
H <sub>03</sub>	Prolonged Study	0.000	Statistically significant	Reject
H <sub>04</sub>	Limited Educational Opportunities	0.082	Not Statistically significant	Accept

From the result in table 5, all the null hypotheses were rejected except null hypothesis four (4).

## VI. DISCUSSION

The result of the analysis conducted above shows the respondents' opinions on the subject of online education as an initiative to curtail the impact COVID-19 on education in Nigeria. Four null hypotheses were formulated and tested at a 0.05 level of significance using the linear regression model facilitated with statistical package for social science (SPSS V21.). The outcomes for each null hypothesis testing are as follow:

*H<sub>01</sub>: Online education does not have a significant impact on learning disruption.*

Applying the criteria rule as earlier, this null hypothesis was rejected. This implies that the alternative hypothesis is accepted which states that online education impacts on learning disruption positively. Following the COVID-19 outbreak, schools shutdown was initiated as a measure to control the spread of the virus. Albeit, it also led to learning disruption as face to face learning which was the predominant learning method used in schools across the country was disengaged. In this regard, online education which presents teachers and students the platform to teach and learn without a physical contact through the aid of the use of technology was considered a better alternative to learning as opposed to zero learning approach where neither students nor teachers are consciously engaged in a planned learning scheme. Although several scholars have opposed to this learning approach citing that it discourages human to human contact which form the bedrock of developing social relationship among individuals, thereby hampering on social skills negatively. Online education was however considered a better fit for learning considering the peculiarity of the times, where human to human contact aids the spreading of the virus, which has already led to the deaths of hundreds of thousands of human lives all over the world.

*H<sub>02</sub>: Online education does not significantly impact on dropout/loss of interest*

Applying the criteria rule, this null hypothesis was also rejected and the alternative hypothesis, which stated that online education impacts on dropouts/loss of interests positively was accepted. Prior to the COVID-19 outbreak, there were several reports showing the difficulties associated with schooling in Nigeria tertiary institutions, ranging from poor funding, high cost of schooling, weak institutions, poor educational policies, outdated school curriculum, etc. All these have reduced the interests of students in learning even while school was in session. More so, the current closure of school has encouraged a high number of drop outs as well as a loss in interest in having a formal education. Some of the present study participants cited orally that most students are only encouraging themselves to just finish the course that they have started while others are compelled by their sponsors, be it parents or guardian to still have a formal education. Buckler *et al.* (2020) stated that the longer schools are closed, the more drop-outs occur. In the light of this, an online education

comes in as a good initiative to manage this negative impact that COVID-19 has had on the Nigerian educational system. This is true because, it keeps the learning session ongoing thereby engaging students in learning activity and also the flexibility that comes with online education is one that reduces the pressure associated with face to face learning because they learn from the comfort of their homes which relieves them of the burden of day to day living cost while in the school premises.

*H<sub>03</sub>: Online education does not significantly impact on prolonged study*

In the same manner of accept/reject criteria, this null hypothesis was rejected and the alternative hypothesis, which stated that online education significantly impacts on prolonged learning positively was accepted. What this meant was that upon the adoption of online education as a learning method for our institutions, the supposedly prolonged non-learning created by the pandemic as schools were shut down and all educational activities were brought to a halt, would be reduced drastically. This is possible because online education bypasses the barrier of physical contact, thereby fostering learning with the use of technology. As such, education activities can continue and students study time will not be prolonged than the supposed time.

*H<sub>04</sub>: Online education does not significantly impact on limited educational opportunities.*

Applying the criteria rule as well, this null hypothesis was accepted. Following the result of table 5, our sample were of the opinion that limited educational opportunities was not an impact of COVID-19 on education. This implies that our sample size agreed that online education has little or no effect on limited educational opportunities. Although, it can be argued that online learning facilitates education thereby preparing students to take on available educational opportunities, however in the context of this study, where limited educational opportunities was unaccepted as an impact of COVID-19 on education in Nigeria, no further perspective was explored as that may be subjective thereby throwing into doubts the objectivity of this study.

## VII. CONCLUSION

This study concludes that the COVID-19 pandemic has had adverse effects on education globally and in Nigeria particularly among developing nations. COVID-19 has major effects on school activities, including research, academic sessions, staff professional development and jobs in the academic sector to mention a few. These effects were felt by both educational institutions, educators, students and parents and other relevant stakeholders in the educational sector.

In recognizing the impact schools shut down had, in that the spread of the virus was curtailed to a large extent thereby preventing further deaths in their hundreds of thousands, this control measure was wholly embraced and appreciated. However, in a further counter control measure to the

negativity associated with this shut down approach adopted, this study therefore proposes online education as a best fit initiative in managing the impact COVID-19 has had on education in Nigeria. The unprecedented school closures due to the COVID-19 pandemic remains a lesson and a warning to the entire educational world particularly for nations that are yet to embrace or adopt distant learning, online education, remote learning, etc. Stakeholders in the education sector have to develop robust strategies and educational policies based on the outcomes of the hypothesis testing in this study to deal with post-Coronavirus era.

## REFERENCES

- [1] Anifowoshe, O., Aborode, A. T., Ayodele, T., I., Iretiayo A., R. and David O. O. (2020). Impact of COVID-19 on Education in Sub-Saharan Africa, [www.preprints.org](http://www.preprints.org).
- [2] Azzi-Huck, K. and Shmis, T. (2020). Managing the impact of COVID-19 on education systems around the world: How countries are preparing, coping, and planning for recovery. Retrieved from: <https://blogs.worldbank.org/education/managing-impact-COVID-19-education-systems-around-world-how-countries-are-preparing>
- [3] Buckler, A., Chamberlain, L., Stutchbury, K. and Hedge, C. (2020). Minimizing 'distance' in distance learning program during a global health crisis: framing an international education response to COVID-19. UKFIET. Available at: <https://www.ukfiet.org/2020/minimisingdistance-in-distance-learning-programmes-during-a-global-health-crisis-framing-an-international-education-response-to-COVID-19/>.
- [4] Carlsson, M, Dahl, G. B., Öckert, B. and Rooth, D. (2015). The effect of schooling on cognitive skills. *Review of Economics and Statistics*, 97(3), 533–547.
- [5] Chen, Y., Liu, Q., Guo, D. (2020). Emerging corona viruses: genome structure, replication, and pathogenesis *J Med Virol* 10.1002/jmv.25681. doi:10.1002/jmv.25681.
- [6] Cheng, V. C., Lau, S. K., Woo, P. C., Yuen, K. Y. (2007). Severe acute respiratory syndrome corona virus as an agent of emerging and reemerging infection. *Clin Microbiol Rev.* 20(4):66094.
- [7] Cheng, V. C. C, Wong, S. C., To, K. K. W., Ho, P. L., Yuen, K. Y. (2020). Preparedness and proactive infection control measures against the emerging Wuhan coronavirus pneumonia in China. *J. Hosp Infect* S0195-6701(20)30034-7. doi:10.1016/j.jhin.2020.01.010
- [8] Cope, C. and Ward, P. (2002). Integrating learning technology into classrooms: The importance of teachers' perceptions. *Journal of Educational Technology and Society*, 5(1), 67-74.
- [9] Donelan, H. (2016). Social media for professional development and networking opportunities in academia. *Journal of further and higher education*, 40 (5), 706-729.
- [10] Dyson, B., Vickers, K., Turtle, J., Cowan, S. and Tassone, A. (2015). Evaluating the use of Facebook to increase student engagement and understanding in lecture-based classes. *Higher Education*, 69(2), 303-313.
- [11] Gorbalenya, A. E., Baker, S. C., Baric, R. S., de Groot, R. J., Drosten, C., Gulyaeva, A. A., Haagmans, B. L., Lauber, C., Leontovich, A. M., Neuman, B. W., Penzar, D. (2020). Severe acute respiratory syndrome-related coronavirus: The species and its viruses—a statement of the Coronavirus Study Group. *bioRxiv2020*; 2020.02.07.937862; doi: 10.1101/2020.02.07.937862
- [12] Honey, M., Culp, K. M. and Carrigg, F. (2000). Perspectives on technology and education research: Lessons from the past and present. *Journal of Educational Computing Research*, 23(1), 5-14.
- [13] Hung, H. T., and Yuen, S. C. Y. (2010). Educational use of social networking technology in higher Education. *Teaching in higher education*, 15(6), 703-714.
- [14] IAU. (2020). The impact of COVID-19 on higher education worldwide Resources for Higher Education Institutions.

- International Association of Universities. Retrieved from: [https://www.iauaiu.net/IMG/pdf/COVID-19\\_and\\_he\\_resources.pdf](https://www.iauaiu.net/IMG/pdf/COVID-19_and_he_resources.pdf)
- [15] Ibrahim, A., Al-Kaabi, A., and El-Zaatari, W. (2013). Teacher resistance to educational change and the impact of digital technologies on scholarly inquiry, pp. 117-142. IGI Global.
- [16] Lai, M. M. C., Holmes, K. V. (2001). Coronaviridae: the viruses and their replication Fields, BN Knipe, DM Howley, PM eds. Fields virology Lippincott-Raven Philadelphia 1163: 1185.
- [17] Lavy, V. (2015). Do differences in schools' instruction time explain international achievement gaps? Evidence from developed and developing countries. *Economic Journal* 125.
- [18] Li, G., Fan, Y., Lai, Y., Han, T., Li, Z., Zhou, P., Pan, P., Wang, W., Hu, D., Liu, X., Zhang, Q., Wu, J. (2020). Coronavirus infections and immune responses. *J Med Virol* 10.1002/jmv.25685. doi: 10.1002/jmv.25685.
- [19] Lu, R., Zhao, X., Li, J., Niu, P., Yang, B., Wu, H., Wang, W., Song, H., Huang, B., Zhu, N., Bi, Y., Ma, X., Zhan, F., Wang, L., Hu, T., Zhou, H., Hu, Z., Zhou, W., Zhao, L., Chen, J., Meng, Y., Wang, J., Lin, Y., Yuan, J., Xie, Z., Ma, J., Liu, W. J., Wang, D., Xu, W., Holmes, E. C., Gao, G. F., Wu, G., Chen, W., Shi, W., Tan, W. (2020). Genomic characterization and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. *Lancet* pii: S0140-6736(20)30251-8. doi: 10.1016/S0140-6736(20)30251-8.
- [20] Manca, S. and Ranieri, M. (2017). Exploring digital scholarship: A study on use of social media for scholarly communication among Italian academics.
- [21] Onyema, E. M. and 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> Paris, France.
- [22] Reimers, F. M. and Schleicher, A. (2020). A framework to guide an education response to the COVID-19 Pandemic of 2020, OECD. [https://read.oecd-ilibrary.org/view/?ref=126\\_126988-](https://read.oecd-ilibrary.org/view/?ref=126_126988-t63lxosohsandtitle=A-framework-to-guide-an-education-response-to-the-Covid-19-Pandemic-of-2020)
- t63lxosohsandtitle=A-framework-to-guide-an-education-response-to-the-Covid-19-Pandemic-of 2020
- [23] The Evolution of Online Learning and Online Academic Programs. (n.d.). Retrieved September 11, 2020, from [onlineeducation.com website: https://www.onlineeducation.com/the-United-Arab-Emirates](https://www.onlineeducation.com/the-United-Arab-Emirates). *International Journal of Research Studies in Education*, 2(3), 2536.
- [24] UNESCO (2020). Covid-19 Impact on Education Data. COVID-19 Education Disruption and Response. The United Nations Educational, Scientific and Cultural Organization, UNESCO.
- [25] United Nations Education Scientific and Cultural Organization (2020). Covid-19 Education Disruption and Response. Retrieved from <https://en.unesco.org/covid-19/educationresponse> Accessed on 5th October 2020.
- [26] Weiss, S. R., Leibowitz, J. L. (2011). Coronavirus pathogenesis. *Adv Virus Res* 81:85-164. doi: 10.1016/B978-0-12-385885-6.00009-2.
- [27] WHO. (2020). World Health Organization. Coronavirus disease 2019 (COVID-19) situation report, Situation report – 33 (22<sup>nd</sup> February 2020). Available online: [https://www.who.int/docs/default-source/coronaviruse/situationreports/20200222-sitrep-33 covid-19.pdf](https://www.who.int/docs/default-source/coronaviruse/situationreports/20200222-sitrep-33-covid-19.pdf) (accessed on 5<sup>th</sup> October 2020).
- [28] Woo, P. C., Lau, S. K., Lam, C. S., Lau, C. C., Tsang, A. K., Lau, J. H., Bai, R., Teng, J. L., Tsang, C. C., Wang, M., Zheng, B. J., Chan, K. H., Yuen, K. Y. (2012). Discovery of seven novel mammalian and avian coronaviruses in the genus deltacoronavirus supports bat coronaviruses as the gene source of alphacoronavirus and betacoronavirus and avian coronaviruses as the gene source of gammacoronavirus and deltacoronavirus. *J Virol* 86(7):3995-4008. doi: 10.1128/JVI.06540-11.
- [29] Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G. and Li, W. T. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International Journal of Biological Science*, 16(10), 1745-1752.