Covid-19 Pandemic and Educational Innovations and Development of Nigerian Tertiary Institutions in the 21st Century

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ABSTRACT

Covid-19 is a social problem with both positive and negative implications on the people. A lot of studies were conducted on the negative implications of covid-19 on nation's educational development, regrettably, there were paucity of scholarsly studies on the posivtive implication of this pandemic on the educational development in Nigeria. Therefore, this study seeks to fill this gap in scholarship by examining the positive implications of Covid-19 pandemic on educational development of tertiary institutions in the 21st century in Nigeria. Thus, the study was guided with three objectives and three corresponding research questions. The social change theory (evolutionary perspectives) and functionalist theory were used as the theoretical approaches to the study.. The study adopted a quantitative method, whereby, the survey design was adopted. The questionnaire instrument was used for data collection. The instrument was titled Covid-19 Pandemic Questionnaire (CPQ) and Educational Innovations, Improvement and Development Questionnaire (EIIDQ). The four Likert scale (SA, A, D and SD) were also used. The sample size for the study was 400 derived through convenience sampling technique. The study equally used quota, purposive and accidental sampling techniques. Simple percentage, mean and standard deviation were used for data analysis. The paper reveals that apart from the negative outcome, the outbreak of covid-19 in Rivers State brought about positive outcome in the tertiary institutions, as there were perceived improvement, innovations and development in the system, through the use of online or e-learning medium. Therefore, the study recommends that teachers who are the pioneer of teaching or education, should even at this period of time when there is ease of the pandemic, utilize or subject the students with e-learning so as to avoid shock in case of future occurrence, and also, that teachers and students should do the needful to ensure they improve on ICT skills in case there is need for e-learning.

KEYWORDS: Covid-19, Pandemic, Development, Tertiary Education, Improvement, Innovations

1. INTRODUCTION

In Nigeria, the output of education is aggregated to be primary, secondary, and tertiary education. Education is seen as development propeller. It is also seen as the first and important yardstick for any nation that sets to experience development. However, whatsoever that stagnant educational system affects the society. This assertion was in line with Emeodu (2015) position, that changes that occur in human society can visit them with retrogression and progression. Over the first half of 2020, the global society was and has been gripped by a pandemic. This pandemic was identified as a new Coronavirus which is known as severe acute respiratory syndrome Coronavirus 2 or SARS-CoV-2, and later named Coronavirus Disease-19 or COVID-19 (Qiu et al., 2020). The Covid 19 pandemic which broke out in China in 2019 and was

declared a global pandemic by the World Health Organization in March 2020 was first reported in Nigeria on February 28, 2020. The disease, which was code-named COVID-19 has recorded over 40 million cases and more than 1 million deaths globally (WHO, 2020).

Covid-19 as a pandemic is explained to mean a large-scale outbreak of infectious disease that can greatly increase morbidity and mortality over a wide geographical area and causes significant educational, economic, social and political disturbances. The covid-19 pandemic has increased due to a persistent increases in global travel and integration, urbanization, amongst others. In Rivers state, the virus registered its presence on 25 March 2020 and has infected over 4,745 persons taken 77 lives as of 23 January 2021(Wakama, 2021).Within this period (2000-2021), the Covid-19 pandemic outbreak has plotted great phobia in the minds of Nigerians educationally, socially, religiously and economically. This has made students in different educational sections among Nigeria citizens barely embark fully on the normal school activities as compared to the pre-covid- 19 pandemic outbreaks.

According to the UNESCO monitoring report on COVID-19 educational disruption and response (2020), the impact of school closures in over 100 countries that have implemented the decisions around the world has impacted over 90 percent of the global student population. In taking this decision, Nigeria is not excluded from this impact. In the view of Nigeria Education in Emergencies Working Group (2020) accounts that close to about 46 million students throughout the country will be affected, not only that but about 40,000 Internally Displaced Persons (IDPs) children will be giving some form of learning in camps and host communities will be affected by stoppage of learning in schools.

This shows that the educational sector is also greatly affected by the deadly virus, and will have to adapt to the change. Presently, in the mode of teaching; many schools in Nigeria and around the globe, have adopted the online teaching method while for the younger ones, their parents have become their teachers or merely get teachers to teach their kids at home. While many European countries have successfully implemented their school setting using online digital tools like zoom or google meet. Many questions have been raised on this; can Nigerian education survive the online teaching methods, coupled with the unavailable network and high rate of purchasing data? In essence, the virus; COVID-19 would be seen in education as a result of the changes in modes of teaching and how students relate in

schools, the ability to adapt to this remains a question to be answered. However, this pulse a fear in the minds of parents and guardians as regards the student's ability to recall and regain all that they've been taught. Despite this, covid-19 has equally contributed to educational changes and development. This is true as the means of pedagogy changed using media platforms such as radio, television, WhatsApp, Zoom and many more. This innovation in the educational sector was not effectively utilized until the outbreak of covid-19 that brought about social distancing, lockdown, inter-state bane and others. This led to innovation and advancement in the educational system to ensure continuity of the process until normalcy was restored. It was obvious that covid-19 came as a shock and affected both the rich and poor, yet educational communities proved tough and acted accordingly to ensure an innovative approach to set the pace rolling so as to reduce the loss. The effort made for alternative learning would lead to the future of education we want, which involves an inclusive change in education delivery.

Statement of the Problem

The COVID-19 pandemic has not stopped at national borders. It has affected people regardless of nationality, level of education, income, or gender. But the same has not been true for its consequences, which have hit the most vulnerable hardest. 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 an alternative learning opportunities. Those from disadvantaged backgrounds often remained to shut out when their schools 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.

As for the challenges it has posed, in a general perspective, Wakama (2021) study examined Covid19 victims and family members in River State; it revealed that coronavirus was and is still responsible for shutting down various aspects of human livelihood, as well as various sectors of the global economy, thereby having grave educational, social, economic and psychological consequences on the entire global world.

Orji Okade (2020) study on the impact of the COVID-19 pandemic on education in Nigeria, discovered that covid-19 has collapsed the educational system in Nigeria. Several problems have been recorded in the process of the pandemic

including the collapse of the 2019/2020 academic calendar, delay in students' promotion and graduation etc. To him, he only considered the negative impact of covid-19 on the educational system.

In a different perspective from the above, Hillary Dupke (2020), investigated on the impact of COVID-19 on education-Insights from Education at a Glance, Kwara State University, Nigeria, revealed that as the world becomes increasingly interconnected, so do the risks we face. The lockdowns in response to COVID-19 have interrupted conventional schoolings with nationwide school closures in most OECD and partner countries, the majority lasting at least 10 weeks. While the education community has made concerted efforts to maintain learning continuity during this period, children and students have had to rely more on their resources to continuity during 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 marginalized 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. The paper only looked at the challenges of covid-19, but in support for innovation in the academic field if the necessary incentives are provided.

Duraku (2020) in a study that investigated the impact of COVID-19 on education and the well-being of teachers, parents, and students: Challenges related to remote (online) learning and opportunities for advancing the quality of Education, revealed that the closure of educational institutions due to preventive measures against the spread of COVID-19 has affected the education, well-being and functioning of all parties involves and benefiting from educational systems in the world. While the process of shifting learning to a remote or online format has already become part of many educational institutions in different parts of the world, several factors related to the quality of educational institutions, teachers, parents and students, in conjunctions which changes to their emotional states are assumed to be contributing factors that may affect the quality of remote or online learning, teacher performance, student knowledge and skills. The findings of this confirm the readiness and motivation of teachers to advance their knowledge and skills, as well as to contribute with the aim of advancing the quality of education. Opportunities to advance the quality of online learning, the support of teachers, parents and families, coupled with practical suggestions for parties involved in the field of education, are also included. Therefore, the paper eventually considered innovation as a way of improving education.

A survey of the Experience and Opinion of Educators and Technology Specialists in September 2020, highlighted the effect of Covid-19 on Education and its implications for the use of Technology. This report and the survey findings behind it provide a unique insight into the perspectives of EdTech experts regarding the impact of the Covid-19 pandemic on education in Africa. It is based on the findings of a survey of the eLearning Africa network, which attracted approximately 1650 responses from respondents in 52 countries in Africa. 15 countries (29%) provide 1217 (73%) of the 52% of the respondents are directly involved in the education sectors and 9% are in the ICT sector. 71% work for the government or not-for-profit organizations, and 21% for for-profit businesses. 40% are teachers/lecturers/professors, and 13% are ICT/EdTech specialists or entrepreneurs.

Therefore, the reviewed studies of scholars have been able to look at the effects of the Covid 19- pandemic. But none of the studies was able to investigate the Covid-19 pandemic and educational development of Nigerian tertiary institutions in the 21st century using two tertiary institutions in Rivers State. It was at this point that the study looked at the functional role of covid-19 in Nigeria's educational system as it brought about innovation and development to the system.

Objectives of the Study
1. To establish the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State
2. To identify the substitute method of evaluation of students during the covid-19 in tertiary institutions in Rivers State
3. To establish the improvement, innovation and development made in educational sector during covid-19 in tertiary institutions in Rivers State

Research Questions
1. Can one establish the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State?
2. Can one establish the substitute method of evaluation of students during the covid-19 in tertiary institutions in Rivers State?
3. Can one establish the improvement innovation and development made in the educational sector during covid-19 in tertiary institutions in Rivers State?

Study Location
The study was carried in Rivers State which is one of the oil-rich states in the south-south region of Nigeria.

Specifically, the study captured two tertiary institutions in Rivers State such the Ignatius Ajuru University of Education and Rivers State University. These two universities were selected for the study as representatives of other tertiary institutions in Rivers State. They are situated in Port Harcourt metropolis precisely in Obio-Akpor local government area, Rivers State. Rivers State is among the 36 states in Nigeria. Rivers State came into existence under Decree No. 14 of 1967 by General Yakubu Gowon's administration on the 27th of May 1967. The state was made up of provinces from the former eastern region of Nigeria. Rivers State has a total area of 11,077 km² (4,277 mi²), with an estimated population of 7,043,800 people in 2015 (https://www.citypopulation.de/php/nigeria-admin). Rivers State is located in the delta region (South-South Zone) of Southern Nigeria. Rivers State is constrained on the North by Anambra, Imo, and the Abia States; the South by the Atlantic Ocean, the West by Bayelsa and Delta States; and the East by AkwaIbom State.

2. Theoretical Framework

Social Change Theory: The study used the social change theory. Therefore, it adopted the evolutionary perspective of social change. The theory was used by many scholars, but this study adopts Anthony Giddens's framework titled **'Time-Space Distanciation' or Distanciationtheory**(2009) as it relates to social change theory. According to Giddens, social life consists of interactions that are face-to-face or remote. Time-Space Distanciationdescribes the process whereby remote interaction has become an increasingly significant feature of human life, and through which social systems that were previously distinctive have become connected and interdependent. Giddens was referring to globalization which in 2009 defined globalization as the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa. Because society has become, what affects one nation affects the others. This explains why all countries around the world were affected by the plague of covid-19. Also, Emeodu (2015) in his study gave some assumptions of social change theory. To him, social change may be driven by cultural, scientific, or technological forces. He added that social change may bring about progress and can also bring about retrogression. This theory is useful to the study as it explains the positive impact of covid-19 brought about by scientific or technological forces which impact led to educational innovation, improvement and development in Rivers state tertiary institutions.

Structural Functionalism (Functionalist Theory): The study also adopted Structural Functionalism (Functionalist Theory).Notable scholars or founders of this theory are Emile Durkheim (1893), August Cornte, Herbert Spencer, Talcott Parson (1961) and Robert Merton (1968).However, Durkheim is often cited as having had a profound influence on the development of functionalism (Okodudu, 2007) as well as Talcott Parsons. According to Haralambos and Holborn (2008), it avers that functionalism explains how the social structure of the social functions for the effective sustainability of the society. This involves an examination of the relationship between the different parts of the structure and the relationship to society as a whole. Hence, reveals the functions of institutions. In practice, the term function is usually used to indicate the contribution an institution makes to the maintenance and survival of the social system. Furthermore, the functionalist sees society as a system. A system is an entity made up of interconnected and interrelated parts. From this viewpoint, it follows that each part will in some way affect every other part and the system as a whole. It also follows that, if the system is to survive, its various parts must have some degree of compatibility. Hence, there is a need to integrate with other parts. They added that if any of the parts suffer or faces abnormality, it affects the whole part.

Relating this theory of our study, the covid-19 pandemic ought to be a health issue that should primarily affect the health sector in society, for the fact that what affects one sector of the society affects others, every other institution was affected by the pandemic. The world economy was affected, politics was affected, the social gathering was affected, education was affected, religion was affected, and so many other areas of human survival and endeavor were affected by a single pandemic that attacked the health institution of the society. The diverse effects of Covid-19 pandemic on all other institutions of the society have justified the theoretical assumptions of the functionalist theory.

3. Literature Review

Covid 19 Pandemic: the concept of the Covid 19 pandemic is a new concept that is evolving because the virus just surfaced recently in China. Covid 19 is defined as an illness caused by a novel Coronavirus now called severe acute respiratory syndrome coronavirus 2 which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the WHO on December 31st, 2019. On January 30, 2020, the World Health Organization declared the Covid 19

outbreak a global health emergency (David, 2021).The COVID-19 pandemic in Nigeria is part of the worldwide coronavirus disease 2019 caused by severe acute respiratory syndromes coronavirus which was first reported in the country on 27 February 2020 when an Italian citizen in Lagos tested positive for the virus. Since its appearance in the shore of Nigeria the pandemic has continued to permeate its tentacles across the spheres of the country unabatedly. The government at all levels has taken confrontational and decisive measures to curb the spread of the virus which has to some extent slowed the spread. As part of social distancing, businesses, schools, community centres, and non-governmental organization (NGOs) have been required to close down, mass gatherings have been prohibited, and lockdown measures have been imposed in many countries, allowing travel only for essential needs. The goal is that through social distancing, countries will be able to "flatten the curve", i.e., reduce the number of new cases related to COVID-19 from one day to the next in order to halt exponential growth and hence reduce pressure on medical services (John Hopkins University, 2020a,b).

Education: The term "education" although used by many is difficult to define, partly because it has a wide variety of meanings, partly because it involves not only one but several complex processes. Due to the complex nature and broadness of education, it is difficult for any definition to be comprehensive enough to satisfy the numerous concepts and interpretations, Ogbondah (2002). Plato (1993) who is one of the earliest moral philosophers, defined education as "that training which is given by suitable baits to the first instinct of virtue in children when pleasure and pain are rightly implanted in rational souls." Again, definitions of education are either sociological or humanistic. In other words, education is either applied as an acculturation of the child to do the will of the society or leading the child to develop his in-built potentials, taking into cognizance his age, interest and ability, among others (Amaele, 2005).

4. Methodology

This paper adopted a survey research design. The work used primary source (questionnaire) and secondary sources of data to collect information from the respondents such as published and unpublished materials. The instrument was titled Covid-19 Pandemic Questionnaire (CPQ) and Educational Innovations, Improvement and Development Questionnaire (EIIDQ). The four Likert Scales of SA, A, D and SD were used. Hence, the population of the study constituted of all the staff and students (both undergraduate and postgraduate students) of Ignatius Ajuru University of Education (IAUE) and Rivers State University (RSU). The sample size was 400 using the convenience sampling technique for the selection. Quota sampling was used to allocate 200 samples to each institution for fairness and equity in distribution. After this, the purposive and accidental sampling techniques were used to reach the respondents and were aided by the help of research assistants. The collected data were analyzed using simple percentages for biodata, the standard deviation for research questions.

5. Data Analysis and Discussion

Table 1: Socio-Demographic Characteristics of Respondents (N = 400)

Variables	Frequency	Percentage
Gender		
Male	200	50%
Female	200	50%
AGE		
20-29 years	85	21.25%
30-39 years	95	23.75%
40-49 years	100	25%
50-59 years	70	17.5%
60 years and above	50	12.5%
Categories of Respondents		
Staffs	150	37.5%
Students	250	62.5%

Fieldwork (2021)

The above table shows various demographic characteristics of respondents, ranging from age, gender, and categories of respondents. This, therefore, included both undergraduate and postgraduate students.

Research Question 1: Can one establish the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State?

Table 2: showing mean and standard deviation score on the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State.

S/N	Questionnaire Items	NO	MEAN	SDT	REMARK
1	Teachers only have face to face contact with students	400	3.76	0.65	Accepted
2	Exams were only conducted in the classroom	400	3.40	0.63	Accepted
3	Classrooms were the only means of teaching and learning	400	3.97	0.89	Accepted
4	Students learn together with other students before the outbreak of covid-19	400	3.34	0.64	Accepted
5	Evaluation of learning behavior was easier as teacher and students interface	400	3.23	0.71	Accepted
6	Most classrooms were flooded with students and many students pay less attention	400	3.21	0.68	Accepted
7	Most lecturers before the Covid-19 outbreak dictate note and hardly teach.	400	3.40	0.62	Accepted
	Grand Mean		**3.47**	**0.69**	**Accepted**

Source: Fieldwork (2021).

The table highlighted the score for the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State. The homogeneity in response among the responses of the respondents implies that all the items support that they are the nature of pedagogy before the emergence of covid-19 in tertiary institutions in Rivers State.

Research Question 2: Can one establish the substitute method of evaluation of students during the covid-19 in tertiary institutions in Rivers State?

Table 3: showing mean and standard deviation score on the substitute method of evaluation of students during the covid-19 in tertiary institutions in Rivers State

S/N	Questionnaire Items	NO	MEAN	SDT	REMARK
8	Do you think that covid-19 led to improvement in the use of IT tools	400	3.47	0.69	Accepted
9	Use of WhatsApp for teaching and learning	400	3.54	0.65	Accepted
10	Defense was done online	400	3.47	0.74	Accepted
11	Invitation of some students for defense was done with proper protection technique, using hand sanitizer and nose-mask	400	3.43	0.68	Accepted
12	Exams were also tried online using students platform	400	2.90	0.96	Accepted
13	The use of zoom app as instructional techniques	400	3.54	0.65	Accepted
	Grand Mean		**3.39**	**0.72**	**Accepted**

Source: Fieldwork (2021).

The table above shows the score of the substitute method of evaluation of students during the covid-19 in tertiary institutions in Rivers State. Given the uniform response among the respondents shows that all the items were substituted methods of evaluation of students during the covid-19 in tertiary institutions in Rivers State. This finding is in tandem with a report of the survey of the Experience and Opinion of Educators and Technology Specialists on September 2020, on the effect of Covid-19 on Education and its implications for the use of Technology which provided a unique insight into the perspectives of EdTech experts regarding the impact of the Covid-19 pandemic on education in Africa. That indeed, the covid-19 provided a platform for e-learning. This, therefore, was what tertiary institutions in Rivers State did by utilizing various learning platforms such as Zoom, WhatsApp, and other platforms that proved their advancement and development in the teaching and learning process.

Research Question 3: Can one establish the improvement, innovation and development made in the educational sector during covid-19 in tertiary institutions in Rivers State?

Table 4: showing mean and standard deviation score on the improvement, innovation and development made in educational sector during covid-19 in tertiary institutions in Rivers State

S/N	Questionnaire Items	Mean	SD	Remark
14	Do you think that after the emergence of covid-19, there have been innovation, improvement and development of education in what use to be	3.43	0.68	Accepted
15	Through the various platform used for teaching during the covid-19, other related pandemic may not easily affect the tertiary institution processes	3.47	0.74	Accepted
16	Our educational system have seen the challenges that erupted during the process of covid-19, therefore can mitigate those challenges to be more digitalized	3.54	0.65	Accepted
17	Do you think that both students and staffs have recently get more attached to ICT tools than before	3.52	0.72	Accepted
	Grand Mean	**3.49**	**0.69**	**Accepted**

Source: Fieldwork (2021).

The table shows mean and standard deviation scores on the improvement, innovation and development made in the educational sector during covid-19 in tertiary institutions in Rivers State. Hence, item 14 had a mean and standard deviation scores of (M=3.43 & SD=0.68). Furthermore, item 15 had mean and standard deviation scores of (M=3.47 & SD=0.73). Item 16 had mean and standard deviation scores of (M=3.54 & SD=0.65). Also, item 17 had mean and standard deviation scores of (M=3.52 & SD=0.72). Given that all the items were accepted, it is proved that the respondents supported that tertiary institutions in Rivers State made some improvement, innovation and development during the Covid-19 pandemic. Connecting the findings with that of Emeodu (2015), it reveals that when changes occur in human society, they can bring about retrogression and progression. Thus, the outbreak of covid-19 in Tertiary institutions in Rivers State brought about the positive outcomes as there are a perceived improvement, innovation and development in the system. Again, the findings are in line with the view of Duraku (2020) that pointed that if opportunities are given, it will advance the quality of online learning and also gives support to the teachers, parents and families, coupled with practical suggestions for parties involved in the field of education in all it will advance the Educational system.

6. Conclusion/Recommendations

The study through its findings has shown that what use to be before covid-19 was transformed into another digitalized process. Learning processes were changed and it led to innovative and improved learning approaches. Most studies by some scholars only considered the effect of covid-19. The study shows that Zoom-App and WhatsApp was the major platform used during the heat of the covid-19 in Rivers State. There existed some challenges that erupted which need modifications for more educational advancement and development. Based on this, the study recommends the following:

1. Government, communities and stakeholders to put hand together to improve and advance the educational system to face the heat of any pandemic, to ensure more progress in the Nigerian educational system. This can be achieved by ensuring that funds are provided to students, as well as training and other facilities to improve capacity.

2. Teachers and students should do the needful to ensure they improve on ICT skills in case there is a need for e-learning.

3. Teachers who are the pioneer of teaching or education, should even at this period whereby there is the ease of the pandemic, utilize or subject the students with e-learning so as to avoid shock in case of future occurrence.

4. As many students and teachers complained of power supply and internet or network hiccups, there is a need for improved electricity and network as, through this, the ICT platform for teaching and learning can be effectively utilized.

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