

**ASSESSMENT OF COVID-19 PANDEMIC ON THE PERFORMANCE OF SS II  
BIOLOGY, STUDENTS IN SENIOR SECONDARY SCHOOL BOSSO LGA NIGER  
STATE.**

**BY**

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**2016/1/63676BT**

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FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL  
TECHNOLOGY, SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION IN  
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## **ABSTRACT**

The present COVID-19 pandemic, which is hitting almost every country in the world, has had a significant effect on schooling. Schools in Nigeria won't physically resume anytime soon, as evidenced by the rising number of illness cases and the expansion of efforts to stop the virus' spread. This study looked on the impact of the Covid-19 on the performance of SSII Biology students in Bosso Local Government Area in Minna, Niger State, Nigeria. Data from a sample of 250 samples from a population of 10,566 in Bosso LGA, Minna, Niger State was gathered. The Covid-19 Impact Assessment Questionnaire (CIAQ), a well-structured questionnaire was the tool used to collect data. At the 0.05 level of significance, descriptive statistics and simple linear regression were used to analyze the data. The COVID-19 pandemic measures had a considerable detrimental impact on the educational growth of secondary school students in Bosso LGA, Minna, Niger State, Nigeria, according to the results. The report suggests, amongst other things, that Nigeria should model its educational system after that of other industrialized countries by collaborating with relevant stakeholders to encourage the use of online/digital learning platforms for all students in Niger State and the country at large.

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## CHAPTER ONE

### 1.0 Background to the Study

The sudden closure of schools by both the Federal and State governments was an urgent need of the alarming situation which prevailed across the states in Nigeria. The Nigerian Government started taking preventive decisions on COVID-19 just after World Health Organisation (WHO) recognized it as a pandemic disease. Coronaviruses, as described by WHO, are a family of viruses that cause illnesses ranging from the common cold to more severe diseases such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). Coronavirus disease 2019 (COVID-19) was first identified in Wuhan city, Hubei Province, China in December 2019 as a pneumonia of unknown origin (Aji, 2021). Later, the international committee on taxonomy of viruses (ICTV) identifies the causative agent of COVID-19 as a novel coronavirus (Alasar and Elshafiye, 2020). Fever, cough, shortness of breath, and breathing difficulties are some of the recorded symptoms of this virus. In more severe cases, it can lead to pneumonia, multiple organ failure, and even death. Current estimates of the incubation period - the time between infection and the onset of symptoms range from one to 14 days. Most infected people show symptoms within five to six days. However, infected patients can also be asymptomatic, meaning they do not display any symptoms despite having the virus in their systems (Aji, 2021).

The COVID-19 pandemic has affected all levels of the education system (Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir, and Iosifidis, 2020). Educational institutions around the world (in 192 countries) have either temporarily closed or implemented localized closures affecting about 1.7 billion of the student population worldwide (UNESCO, 2020). Many schools around the world either postponed or canceled all their activities to minimize gatherings and hence decrease the transmission of the virus. It is important to note that most of these measures lead to higher economical, medical, and social implications for both undergraduate and postgraduate Students (Mahdy, 2020). Few studies highlighted the impact of COVID-19 on educational studies. COVID-19 has a profound impact on

the academic performance of students (Iyer, Aziz, and Ojcius, 2020). The disruptive effects of the COVID-19 outbreak impacted all sectors of our society and education is no exception to this with evidence painting a bleak picture for schools and students. The American Council on Education recorded that enrolment was likely to drop by 15% in the fall of 2020, while at the same time, many institutions may have to confront demands for large tuition cuts if classes remain virtual. Furthermore, the economic and health shocks subjected students to an uncertain environment. The lack of resources for effective learning and/or fear of contracting the virus affected their academic performance, educational plans, current labour market participation, and expectations about future employment.

Following the COVID-19 pandemic, all schools in Nigeria were closed from March 27, 2020, as one of the Federal Government's measures to limit the spread of the disease. This translated to a contextualized state-wide school closure across the 36 states in the country. In response, different states' Ministries of Education have been releasing modalities for radio and TV schooling and internet-based learning for students in public primary and secondary schools. Though these efforts could be effective, with experience from developed countries, they can amount to a far-reaching negative impact on the education system in developing low-income countries like Nigeria (Obiako & Adeniran, 2020). For instance, as the COVID-19 pandemic is revolutionizing digital and online education globally, primary and secondary school learners in rural and under-served communities remain behind due to a lack of skills and resources to adapt or transition to the new learning avenues.

In addition, university students who may have the skills to undertake Internet-based learning face poor internet infrastructure and a lack of reliable electricity supplies (Crawford et al., 2020; Zhong, 2020). Thus, learning remotely (including radio, TV schooling, and online learning apps for primary and secondary learners, virtual libraries, and online classes in universities) is practically not feasible in most Nigerian communities. Poorly resourced institutions and socially disadvantaged learners where limited access to technology and the internet, as well as students' inability to engage in an online environment, undermine Government response (Zhong, 2020). The suspension of classroom

teaching across schools all over the world led to a switch to online teaching for undergraduate and graduate students becoming effective largely in private institutions where the provision was afforded (reviewed in Sahu, 2020 and Yamin, 2020). This form of learning provides an alternative way to minimize either the contact between students themselves or between the students and lecturers (Pragholapati, 2020). However, many students have no access to online teaching due to a lack of either the means or the instruments due to the economical and digital divide as identified by Mahdy (2020). It became even more daunting considering how ill-funded most public secondary schools are in Nigeria, with several of them lacking basic school infrastructure and equipment. It is also worth of note that not many of these schools have computer laboratories for learning. All these factors ensured that transitioning to an online mode of learning was completely out of the picture. Therefore, this study will aim at assessing the impact of the COVID-19-induced pandemic on the academic performance of SS II Biology students across the Bosso Local Government Area of Niger State.

### **1.1 Statement of Research Problem**

The COVID-19 pandemic created the largest disruption of education systems in human history. The closure of schools affected more than 94% of the world's student population bringing far-reaching changes in all aspects of our lives. Social distancing and restrictive movement policies had significant effect on educational practices. In Nigeria and Niger State, in particular, activities in public schools were put on hold for the better part of a year. This represented a major setback in the academic performance of students, many schools could not have access to learning resources or mentoring they would normally get while in school. For SS II Biology students who ought to be in the final stages of preparation for their terminal examinations such as the West African Examination Council (WAEC) and National Examination Council (NECO). This study aims to teach the effect of COVID-19 pandemic on the academic performance of students in the Bosso Local Government Area of Niger State.



## **1.2 Aim and Objectives of the Study**

This study aims to examine the impact of the COVID-19 pandemic on the academic performance of SS II Biology students in Bosso Local Government Area of Niger State. These will be achieved through the following objectives:

- i. To identify the educational challenges of COVID-19 pandemic on the academic performance of SS II Biology students in Bosso Local Government Area.
- ii. To identify means of accessing education in case of Covid -19 in future

## **1.3 Research Questions**

1. What are the educational challenges posed by the COVID-19 pandemic in Nigeria?
2. To what extent have the challenges affected the academic performance of SS II Biology students in Bosso Local Government Area?

## **1.4 Research Hypothesis**

**H<sub>01</sub>:** COVID-19 pandemic had a significant impact on the academic performance of SS II Biology students in Bosso Local Government Area.

## **1.5 Scope of the Study**

The scope of this study will be focusing on SSII students in Bosso secondary school Niger State. This study/research is focused on the effect of Covid-19 on students' academic activities.

## **1.6 Operational Definition of Terms**

**COVID-19:** This is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease.

**Academic Performance:** This is the extent to which a student, teacher or institution has attained their short or long-term educational goals.

## CHAPTER TWO

### 2.0

### LITERATURE REVIEW

#### 2.1 Introduction

The following categories best describe the key areas reviewed for this project work:

1. Conceptual framework
2. Theoretical framework
3. Empirical study

#### 2.2 Nature and scope of Biology

Romanized bios, which means "life," and -; romanized -loga, which means "branch of study" or "to talk," are the origins of the phrase "Biology" in English. By merging these words, the Greek word Biologia, which means "Biology," was created. Yet, the expression was not present throughout all of Ancient Greece. English and French were the first to borrow it (biologie). Liferore was a former name for Biology in the English language, but it is no longer in use. The Latin-language variant of the word was first used in 1736 by Swedish scientist Carl Linnaeus (Carl von Linné) in his *Bibliotheca Botanica*. Michael Christoph Hanov, a Christian Wolff disciple, used it once more in his 1766 publication *Philosophiae naturalis sive physicae: tomus III, continens geologian, biologian, and phytologian generalis*. The term "biologie" first appeared in a 1771 translation of Linnaeus' work. The phrase was coined by Theodor George August Roose in the foreword of his 1797 book, *Grundzüge der Lehre van der Lebenskraft*. Karl Friedrich Burdach first used the phrase "propädeutik zur Studies der gesammten Heilkunst" in 1800 to refer to the morphological, physiological, and psychological study of people. In his six-volume dissertation *Biologie, oder Philosophie der lebenden Natur* (1802–22), Gottfried Reinhold Treviranus, who is credited with coining the phrase, wrote: "The various forms and expressions of life, the conditions and laws under which these phenomena occur, and the reasons by which they have been affected, shall be the focus of our inquiry." We'll call the

field of science that studies these things Biology (Biologie) or life doctrine (Lebenslehre). Many other terms used in Biology to describe plants, animals, diseases, and drugs have been derived from Greek and Latin because of the historical contributions of the Ancient Greek and Roman civilizations, as well as the continued use of these two languages in European universities during the Middle Ages and at the beginning of the Renaissance.

The scientific study of life is known as Biology. It is a large field of natural science that is united by a number of overarching themes that make up a single, coherent topic. Michael Cain, Steven Wasserman, Peter Minorsky, Jane Reece, Lisa Urry (2017). For instance, all living things have cells that process genetic information that can be handed on to future generations. Another essential idea is evolution, which explains the similarity and diversity of life. Processing energy is essential for life since it enables movement, growth, and reproduction in living things. Last but not least, each organism is capable of regulating its own internal environment. Lizabeth Allison, Michael Black, Greg Podgorski, Emily Taylor, Scott Freeman, Kim Quillin, Jeff Carmichael (2017).

Biologists can look at the various organizational layers of life, the morphology and physiology of plants and animals, population evolution, and molecular Biology of a cell. As a result, Biology is split up into a number of subdisciplines, each of which is characterized by the nature of its research goals and the tools it makes use of. Like other scientists, biologists make observations, pose questions, develop hypotheses, design tests, and draw conclusions about the world using the scientific process. Life on Earth, which evolved more than 3.7 billion years ago, is incredibly diverse. Biologists have made an effort to investigate and categorize the various kinds of life, starting with prokaryotic species like archaea and bacteria and progressing to eukaryotic organisms like protists, fungi, plants, and animals. By filling specialized functions in the nutrition and energy cycles occurring within their biophysical environment, these species contribute to the biodiversity of an ecosystem.

### **2.3 The Biology Curriculum**

The Biology Curriculum builds on the strengths of the current Biology curriculum and is a continuation of the Science (SS1-3) Curriculum. In order for students to acquire the necessary scientific information and understanding, skills and processes, and values and attitudes, it will offer a variety of balanced learning experiences in the "Life and Living" strand and other strands of science education. In order for students to contribute to a scientific and technological world, they are essential for their personal development. The curriculum will prepare students for careers in a variety of life science fields as well as for higher education and vocational training. Our lives will continue to be significantly impacted by the development of a highly competitive and interconnected economy, increased scientific and technological developments, and an expanding body of knowledge. The Biology Curriculum, like other science electives, offers a foundation for developing scientific literacy and obtaining core scientific knowledge and skills for lifetime learning in order to tackle the challenges presented by these advancements. Students will acquire practical and theoretical Biology knowledge that will help them comprehend a range of contemporary issues. They will comprehend the connections between science, technology, society, and the environment. Also, students will grow to respect the environment, feel like responsible citizens, and want to improve their health and the health of their community.

The study of Biology, which is expanding quickly, comprises a wide body of knowledge on living things. Many people have the idea that this subject demands them to remember a lot of unrelated data. The objective of this curriculum is for students to learn a collection of essential facts as well as a broad, all-encompassing understanding of biological principles and concepts. In order to make Biology studies interesting and applicable, it is advised that Biology be introduced in real-life situations. Regardless of the students' abilities or objectives, a variety of learning and teaching approaches as well as evaluation procedures are used in order to capture their interest and urge them to study. The main objective of the biology curriculum is to give students Biology-related learning

opportunities that help them gain scientific literacy. This will enable them to actively participate in our knowledge-based society, prepare for further education or careers in the life sciences, and develop into lifelong learners of science and technology. The broad objectives of the biology curriculum are to equip students to:

1. Encourage a love of Biology, awe and astonishment at the living world, and respect for all living things and the environment.
2. Enable students to develop and use their biological knowledge. Recognize the nature of science in circumstances relating to Biology. Recognize the connections between Biology and other academic fields.
3. Enable students to develop the ability to carry out scientific research, think critically and creatively, and work with others to find solutions to Biology-related challenges.
4. Enable students to convey ideas and opinions on matters relating to Biology by being familiar with scientific jargon.
5. Enable students to be able to make informed decisions and judgements on biological subjects and to comprehend the social, ethical, economic, environmental, and technical implications of Biology.

#### **2.4 The Need for Assessing the effect of COVID -19 on performance of Students in Bosso LGA, Niger State.**

The first case of Covid-19 recorded in Nigeria was confirmed on 27<sup>th</sup> of February, 2020, the case was an Italian who works in Nigeria and returned from Milan to Lagos. He was confirmed by the Virology Laboratory of the University Teaching Hospital, Lagos, LUTH, part of the Laboratory network of the Nigerian Centre for Disease Control. The Federal Government through the Federal Ministry of health has been strengthening measures to ensure that an outbreak of the deadly virus is controlled and contained quickly. All hands were on deck. Nigeria as the most populated black nation with an estimated population of over 200 million people located in Sub Sahara Africa was not spared by the

Pandemic as the cases as at June 28, 2020 have risen to over 24,000 with over 500 deaths and over 4,000 patients discharged (WHO, 2020; NCDC, 2020c). In addition to the human impact of Covid-19, there is also significant economic, social, educational, business and commercial impact being felt globally as major economies are being shut down due to restriction of movement within/between countries.

On the 20<sup>th</sup> March 2020, the Nigerian government through the ministry of education directed the closure of all schools as a precautionary measure aimed at checking the spread of the COVID-19 virus across the nation. (Adeoye, Adanikin & Adanikin, 2020). As of June 2020, all schools have been closed, keeping the children at home and affecting the educational development of about 46 million students throughout the country (EIEWG, 2020). The ripple effect of the pandemic has affected students both at the primary, secondary, and tertiary level, including the educators themselves as academic sessions, have been disrupted. The federal government of Nigeria like other Governments across the globe have initiated different unprecedented responses in a concerted effort to combat the negative economic impact of Covid-19, but the damage may have already been done and the socio-economic impact will still be felt long after the virus fades (Richard & Beatrice, 2020). Schools, Offices, Worship centres, Business areas, recreational centres, Markets, Banks, were all shut down by the government in order to contain the spread of the deadly virus. As part of measures to contain the spread of the virus across the country, inter-state movement restrictions were placed by State Governments in a bid to shield their indigenes from getting infected, of which Niger State was not excluded. All public and private schools and other higher institution of learning were shut down within the State. This lockdown and restriction of movements was a major blow on the economic, social and educational activities in the state thereby paralysing learning activities. Parents prevented their wards from going to school. As the lockdown lingered on, individuals, corporate bodies, state and federal government had to devise means for containing the disease to the barest minimum. In the course of analysing Covid-19 pandemic in Nigeria, Enahoro, Oluwaseun, Calistus, and Abba (2020) developed a mathematical model for understanding the transmission dynamics and control of Covid-

19 in Nigeria, one of the main epicentres of Covid-19 in Africa. They adopted a rigorous analysis based on the Kermack – Mc Kendrick type compartmental epidemic model for their study, which took the form of a deterministic system of nonlinear differential equations. Their mode of analysis revealed that the model has a continuum of disease-free equilibria which is locally-asymptotically stable whenever a certain epidemiological threshold, called the control reproduction ( $R_c$ ) is less than unity. The epidemiological implication of this result is that the pandemic can be effectively controlled in Nigeria if the control strategies implemented can bring and maintain the epidemiological threshold ( $R_c$ ) to a value less than unity. The model, which was parameterized using Covid-19 data published by NCDC, was used to assess the community-wide impact of various control and mitigation strategies in the entire nation. In addition, Enahoro, Oluwaseun, Calistus and Abba (2020) further showed that, for the worse-case scenario where social-distancing, lockdown and other community transmission reduction measures are not implemented, Nigeria would have recorded a devastatingly high Covid-19 mortality by April 2021 (in hundreds of thousands). They however showed that Covid-19 can be effectively controlled using social-distancing measures provided its effectiveness level is at least moderate, the use of face masks in the public can also significantly reduce Covid-19 in Nigeria. In a country where 10.5 million children aged 5 to 16 are not in school and a nation where 40.1 per cent of the citizens are poor. The pandemic has created a gap and has left most children behind in terms of learning (Obiakor & Adeniran, 2020; Ndem, Angioha & Dike, 2020; Ofem & Omang, 2018). The Nigerian educational sector like other sectors of the nation's socio-economic system is correlated to the level of income. Public schools differ from private schools. The private schools are attended by those of higher socioeconomic status, while the public schools are attended by those of low socioeconomic status. In situations where long-distance learning or E-learning is available, children who attend public schools are unable to attend as a result of poor infrastructures, lack of electricity etc. This situation is what the COVID-19 pandemic has brought to the fore.

Studies have shown the extent that the coronavirus has had on educational development. Ogunode (2020) assessed the effect of the COVID-19 pandemic on secondary school academic program. using



survey design, data were collected from 80 school teachers. Result revealed that COVID-19 pandemic has affected the school calendar and disrupt the literacy level of students. Aristovnik, Keržič, Ravšelj, Tomažević and Umek (2020) assessed the impact of COVID- 19 on higher education students. From the analysis of result collected from 30,383 students from 62 nations, result revealed that the there is a correlation between COVID-19 and educational capabilities of higher education students. This, as a result, gave rise to the inception of this study in a view of assessing the impact of Covid -19 on the performance of SSII Biology students in Bosso Local Government Area of Niger State.

## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the research methodology employed by the researcher and therefore, provides information on the research design, population and sample size, sampling technique, data collection instrument, procedure for data collection and procedure for data analysis.

#### **3.2 Research Design**

The research design used for this study was survey approach i.e., the use of a questionnaire to assess the impact of the COVID-19 pandemic on the performance of SSII Biology students in Bosso local government, Minna, Niger State. The selected schools are: Government Day Secondary School, Bosso, Mariam Babangida Girls Science College, Father O'Connell Secondary School, Ahmadu Bahago Secondary School, Government Girls Day Secondary School. The secondary schools were specially selected out of available public schools that existed in Minna. The research instrument used for data collection was a self-designed questionnaire tagged "Covid-19 Impact Assessment Questionnaire" (CIAQ) which was validated by the project supervisor and copies of modified version were personally administered by the researcher to 250 respondents (who were picked mainly from senior secondary schools two SSII) in the schools selected for the study; 25 copies of the instrument were administered to each of the five schools. Pearson Product Moment Correlation Formula was used to validate the reliability of the instrument in which  $r = 0.87$ . The data were collected and analysed with simple descriptive statistical tools of frequency counts, percentages and tables.

#### **3.3 Population Of the Study**

The population of the study comprises selected secondary schools under Bosso local government in Minna metropolis, Niger state. According to the Education statistics as given by the Niger State Bureau of Statistics, it was shown that the number of public secondary school enrolment grew from

7848 in 2005 to 10,566 in 2011 for Bosso local government area. (NSBS 2012). The study population for this research were the SSII Biology students of the five randomly selected secondary schools in Bosso Local government area in Minna. The population of the study is as shown in the table below;

| S/N          | SCHOOLS                 |       | POPULATION BY GENDER |            |            |
|--------------|-------------------------|-------|----------------------|------------|------------|
|              |                         |       | Male                 | Female     |            |
| 1            | Government              | Day   | 32                   | 32         | 64         |
|              | Secondary School, Bosso |       |                      |            |            |
| 2            | Mariam Babangida        | Girls | 55                   | 53         | 106        |
|              | Science College         |       |                      |            |            |
| 3            | Father O'Connell        |       | 59                   | 59         | 118        |
|              | Secondary School        |       |                      |            |            |
| 4            | Ahmadu Bahago           |       | 47                   | 47         | 94         |
|              | Secondary School        |       |                      |            |            |
| 5            | Government Girls        | Day   | 36                   | 36         | 72         |
|              | Secondary School        |       |                      |            |            |
| <b>Total</b> |                         |       | <b>229</b>           | <b>229</b> | <b>454</b> |

### 3.4 Sample and Sampling Technique

Five out of the secondary schools under the Bosso Local Government area in Minna, Niger state were considered for this research project. The researcher would take samples randomly from the purposively selected schools. A sample size of 250 students were selected from all the secondary schools under consideration.

### **3.5 Research Instrument**

This study made use of a key instrument in collecting data, Covid-19 Impact Assessment Questionnaire (CIAQ). The Researcher designed the CIAQ which was distributed among respondents. It was constructed after a careful and extensive study of the related literature. The CIAQ was divided into two sections (A and B). Section 'A' contains background information which requires each respondent to indicate the gender and class. Section B contained questions aimed at accessing the impact of the Covid-19 pandemic on SSII Biology students in Bosso, LGA, Minna, Niger State.

### **3.6 Method Of Data Collection**

The consent of the school authorities whose students formed the sample for the study was obtained to administer the CIAQ to the respondents. The administration of CIAQ was done with the assistance of the school teachers and responses were collected immediately from each of the selected secondary schools. The researcher assured the respondents that the purpose of the CIAQ is only meant for research purpose only and the information provided by the respondents will be kept safe with utmost confidentiality.

### **3.7 Method Of Data Analysis**

In the analysis of the data, frequency tables and percentage distribution of responses were used as the results were grouped according to responses and it is practically shown in tables in the order of responses by the respondents. A percentage response of 35% and above shows acceptance, while from 1% to 34% shows a rejection.

## CHAPTER FOUR

### 4.0

### RESULTS

#### 4.1 Introduction

The outcomes of the Methodology's procedures were thoroughly examined and reported in this chapter under the subheadings of Analysis, Interpretation of Findings and Analysis of Data.

#### 4.2 Analysis and Interpretation of Results

The survey's responses were gathered and organized in accordance with this particular sub-heading. This is carried out for Sections B of the survey questionnaire. Yet, this was noted for all of the three rural schools that were taken into account.

**SECTION: B**      **Table 4.2.1**

| S/N | Questions  | SA | A  | M  | D  | SD |
|-----|--|----|----|----|----|----|
| 1   | Covid-19 has been a major setback on the academics of students.                  | 40 | 10 | 5  | 3  | 2  |
| 2   | Most students find learning more difficult the Covid-19 season.                  | 36 | 17 | 4  | 2  | 1  |
| 3   | Distance learning has helped to improve studying for students.                   | 29 | 21 | 4  | 5  | 1  |
| 4   | Distance learning should replace classroom learning.                             | 29 | 27 | 1  | 3  | -  |
| 5   | Classroom learning is far better than Distance/Online learning.                  | 18 | 6  | 7  | 24 | 5  |
| 6   | Not many students have access to Online/Distance learning                        | 22 | 11 | 5  | 7  | 15 |
| 7   | Students takes Classroom learning more seriously than Online/Distance learning.  | 25 | 12 | 11 | 9  | 3  |
| 8   | Students study more frequently in the Covid-19 season than the pre-covid season. | 4  | 13 | 6  | 8  | 29 |

|           |   |               |               |               |               |               |
|-----------|---|---------------|---------------|---------------|---------------|---------------|
| <b>9</b>  | Learning Biology subject has been easy in the Covid-19 era.   | 1             | 7             | 6             | 20            | 26            |
| <b>10</b> | Learning Biology subject has been difficult in this Covid-19 era  | 19            | 22            | 15            | 4             | -             |
| <b>11</b> | Covid- 19 has impacted the study of Biology positively  | 5             | 24            | 8             | 20            | 3             |
| <b>12</b> | Covid- 19 has impacted the study of Biology negatively.   | 1             | 6             | 17            | 29            | 7             |
| <b>13</b> | The quality of teachers affects the way students perceive the biology subject                             | 11            | 23            | 5             | 17            | 4             |
| <b>14</b> | Some students of biology do not have access to the Online/Distance learning platforms during the Covid-19 | 19            | 17            | 3             | 15            | 6             |
| <b>15</b> | Biology subject is better understood while in class than when taught Online                               | 18            | 6             | 7             | 24            | 5             |
| <b>16</b> | Since biology involves practical, classroom learning is better than Online learning                       | 34            | 17            | 2             | 5             | -             |
| <b>17</b> | Students takes the classroom teaching more seriously than the Online teaching.                            | 19            | 22            | 15            | 4             | -             |
| <b>18</b> | Poor infrastructures affected the teaching of biology during the Covid-19.                                | 22            | 27            | 11            | -             | -             |
|           |   | <b>84.00%</b> | <b>45.00%</b> | <b>11.00%</b> | <b>13.40%</b> | <b>15.05%</b> |

The questions listed in the table 4.2.1's items 1 to 18 were in line with the research to determine the impact of the COVID-19 pandemic on the academic performance of SS II Biology students in Bosso Local Government Area of Niger State. It demonstrates that more students' responses to the questionnaire items fell into the Strongly agreed column than the Agreed column. It is also important to highlight that the students firmly agreed with the idea that Covid-19 had a major setback on the academics of students, according to the replies received where majority of the students about 66.67% Strongly agreed and 16.67% Agree to this fact. From the responses gathered, it was shown that quite a number of students had access to the digital mode of learning, 36.67% strongly agreed to this fact, about 18.33% Agree while handful of them of about 25% strongly disagreed to the fact. This however

showed that learning through online tutors and educational forums proved a great deal in helping the students to learn Biology during the covid-19 pandemic. As a matter of fact, some schools had to resort to online teaching platforms on some mobile applications such as zoom, WhatsApp, Telegram etc in order to bridge the gap in educational activities that the covid-19 pandemic had created. However, lack of adequate and sophisticated infrastructure hindered hitch free academic activities during the covid-19 pandemic. This research however fulfilled one of its aims by proving this through the responses harvested from the correspondents.

It is worthy of note, that for some of the schools in Bosso, Minna metropolis, teaching and learning the biology subject was a bit difficult during the Covid-19 pandemic season. Responses gathered showed that 31.67% of the students Strongly Agree and 36.67% Agree to this. Only 6.7% of the students showed disagreement to this fact. This further showed learning activities was to a large extent an uphill task for a great number of the students in Bosso, Minna metropolis during the Covid-19 pandemic. This fact is one of the major educational challenges being encountered by the students even till date.

#### **4.3 Further findings.**

The questionnaires also gave respondents clear insights into some of the study's additional findings. The results of the study revealed various elements that either improved or diminished the students' questionnaire responses. Following are some of these factors mentioned in accordance with the responses from the respondents;

1. ***Inadequate Enlightenment:*** Some of the students do not have access to learning gadgets and applications. For example, it was discovered in the course of this research that some students do not know what the Zoom application is being used not to talk of using such. Although, quite a few have the WhatsApp application installed on their phones, but they do not see it as a great learning tool, majority of them see as a mere socialising tool. Both students and

Teachers should be trained in future on how to harness some of these applications to improve learning and break any barrier in learning in case of any disease outbreak in the nearest future.

2. **Language Barrier:** Some of the respondents found teaching and learning to be nearly impossible for them due to their incapacity to comprehend in English. Most of these applications run on the English language, most subjects including Biology is taught in English language, thereby making it difficult for students who do not speak or comprehend the language to cope very well in their academics during the pandemic.

Other major barriers posing a threat to teaching and learning for students this period include the poverty rate, religious and cultural views, a lack of technical know-how regarding how to utilize the devices/appliances, illiteracy, and a variety of government-related issues. But it is nearly impossible to learn from a broadcasting medium that one is not even familiar with.

#### **4.4 Summary**

The goal of this chapter, which was to identify the educational challenges of COVID-19 pandemic on the academic performance of SS II Biology students in Bosso Local Government Area, Minna, Niger State, was achieved, based on the findings documented and presented in this chapter. The results indicated that the covid-19 pandemic posed a major threat to the academic activities in the study area and exposed some of the lapses currently being experienced in our educational system. The was able to analyse some of these lapses and its impact on students thanks to the results that were gathered. Based on the findings of the conducted survey, certain significant elements that influenced the learning activities during the covid-19 pandemic were also emphasized.



## **CHAPTER FIVE**

### **5.0 CONCLUSION AND RECCOMENDATION**

#### **5.1 INTRODUCTION**

The significance of the study, its objectives, and its research questions are all connected in this section. This provides a summary of the study, infers conclusions about the results, and makes recommendations based on the research. In the conclusions, it is stated how the results of this inquiry relate to the reviewed literature. The proposals include a conceptual overview and suggestions for future studies. Also, this chapter includes suggestions for extending the current research in secondary schools across Nigeria, particularly those in Minna, Niger State.

#### **5.2 CONCLUSION**

The objectives of this study, which include to identify the educational challenges of COVID-19 pandemic on the academic performance of SS II Biology students in Bosso Local Government Area and to identify means of accessing education in case of Covid -19 in future were all met. Covid-19 pandemic had a major effect on the academic activities of students in Bosso local government of Niger State, particularly the SSII Biology students despite some limitations to the project's objectives. The results that were acquired allowed the researcher to examine the effects on students.

#### **5.3 RECOMMENDATIONS**

In view of the findings of this survey, the following are the major recommendations;

1. Similar studies could be conducted to cover the primary as well as junior secondary schools across all the local government areas in Minna, since the current study was restricted to senior secondary schools in Bosso local government area in Minna, Niger State.
2. All schools in the state should be made exposed to the use of online digital teaching and learning methods.

3. The Government at all levels should help see to it that some of the applications used for the online teaching purposes be translated to our local languages, this will help some of the students who find it difficult to grasp the English language to learn better.

4. To improve teaching, learning, efficiency, and positive accomplishment, national and state government and educational policy makers must provide all schools with equipment that is about comparable across the board. Enough funds is necessary to recruit skilled teachers, provide a conducive learning environment in the classroom, improve the working conditions of teachers, and purchase equipment for routine supervision and system checks.

#### **5.4 SUGGESTIONS FOR FURTHER RESEARCH**

Future research could examine how family history, socioeconomic position, and peer group can be maximized to improve teaching and learning process in secondary schools of rural areas in Niger state in light of the aforementioned findings.

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