

## **Impact of Covid – 19 Pandemic School Lock – Down on the Academic Performance of Undergraduate Biology Education Students in North – East, Nigeria.**

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### **Abstract**

This study investigates the impact of COVID-19 pandemic school lock-down on the academic performance of undergraduate biology education students in North-East Nigeria. The design of the study was an ex- post factor research design. The population of the study comprised 676 final year biology education students from seven public universities in North-East Nigeria. Multistage sampling technique was used to select five (5) public universities with a sample size of 265. Mean and Standard Deviation were used to answer the research questions while independent and paired sample t-test were used to test the null hypotheses at  $\alpha = 0.05$  level of significance. Findings of the study reveal that students from urban areas in North-East Nigeria recorded high academic performance after COVID-19 school lock-down compare to the semester before school lock-down. Similarly, result of the study reveal that biology education students from rural areas in North-East Nigeria recorded significantly higher academic performance after COVID-19 school lock-down than their performance before the pandemic. Based on these findings, the study recommended that a study should be conducted to find out what actually was responsible for students high performances after COVID 19-school lock-down and undue stay at home.

**Keywords: Impact, COVID-19, school lock-down, students and academic performance.**

### **Introduction**

Nigeria's prosperous development to stride among its contemporaries is extensively narrowed down by so many factors; this include corroded education system, killer diseases and pandemic such as swine flu in 2009 polio in 2014, Ebola in 2014 Zika in 2016 and Ebola again in 2019 which have post a significant threat to the education sector, but of all this; non was as devastating as COVID-19 (Al Jazeera, 2020). The impact of COVID-19 pandemic on education was a concern to both national and international communities; this is evident from the report of (Onyema, 2020) who pointed that, the educational section is the worst affected by the pandemic because face-to-face academic activities and the universities program globally including those in North-East Nigeria were completely suspended.

School closure in respond to COVID – 19 pandemic have shed light on numerous issues affecting access to education while students remain at home as part of preventive measures to prevent the virus, such decision may have a negative impact on students

academic performance in science subjects biology education inclusive. (United Nation Education and Cultural Organization [UNESCO], 2020).

Studies that evaluate the impact of COVID-19 pandemic school lock-down on students' academic performance in North-East Nigeria are dearth. Therefore, this study investigated the impact of COVID-19 pandemic school lock-down on the academic performance of undergraduate biology education students in North – East Nigeria.

### **Statement of the Problem**

The impact of COVID – 19 pandemic schools lock-down disrupted the universities program especially the 2019/2020 academic performance in a manner of irreparable implication, (Onyema et al., (2020). According to (UNESCO, 2020). Students around the world were affected by closure of schools due to the outbreak of COVID pandemic. Schools including those offering biology educations at all levels were shut down for about 10 months (equivalent to an academic session). Even though some school (universities) provided remote online instructions for their students but it remained unclear how effective a sudden switch to remote online learning was, due to technology divide, and that most students and lecturers had little experience with online learning. While schools were closed due to the impact of the pandemic and students were asked to stay at home for months, the question of what is the implication of this decision on students' academic performance. Hence, this study investigated the impact of COVID-19 pandemic school lock-down on the academic performance of undergraduate biology education students in North-East, Nigeria.

### **Research Questions**

The following research questions guided the study

- i. What is the academic performance of undergraduate biology education students in urban areas in North-East Nigeria before and after COVID-19 pandemic school lock - down?
- ii. What is the academic performance of undergraduate biology education students in rural areas in North- East Nigeria before and after COVID – 19 pandemic school lock – down?

### **Hypotheses**

The following null hypotheses were tested at 0.05 level of significance.

H<sub>01</sub> There is no significant difference in the academic performance of undergraduate biology education students in urban areas in North – East Nigeria before and after COVID – 19 pandemic school lock-down.

H0<sub>2</sub> There is no significant difference in the academic performance of undergraduate biology education students in rural areas in North – East Nigeria before and after COVID – 19 pandemic school – lock down.

### Research Methodology

The study adopted an ex-post factor research design. The population of the study was 767 undergraduate biology education students from the seven (7) public universities in North-East, Nigeria. Multistage sampling technique was used to draw a sample size of 256 students for the study.

Data collected was analyzed using mean and standard deviation to answer the research questions, while independent and paired sample t-test where used to test the hypothesis at 0.05 level of significance.

## RESULT

### Research Question One

What is the academic performance of undergraduate biology education students in urban areas before and after COVID-19 pandemic school lock-down in North-East Nigeria?

**Table 1: Mean and Standard Deviation of students academic performance before and after COVID-19 pandemic school lock-down in urban areas in North-East Nigeria.**

Variable	N	Mean	SD	T	P-value
GPA before lock-down	128	2.53		0.72	
GPA after lock-down	128	2.57	0.73		3.34 0.02

Result from table 1 showed that the students' performance before COVID-19 school lock-down has a mean score of 2.53 and standard deviation of 0.71 while their performance after COVID-19 has a mean score of 2.57 and standard deviation of 0.73, leading to a mean gain of 0.04 in favour of performance after COVID-19 pandemic school lock-down.

### Research Question Two

What is the academic performance of undergraduate biology education students from rural areas before and after COVID-19 pandemic school lock-down in North-East Nigeria?

**Table 2: Mean and Standard Deviation of Students' academic performance from rural areas before and after COVID – 19 pandemic school lock-down in North-East, Nigeria.**

Variable	N	Mean	SD	T	P-value
GPA before lock-down	128	2.86		0.72	
GPA after lock-down	128	2.89	0.73		3.34 0.03

Result from table 2 showed that students' performance from rural areas before COVID – 19 has a mean score of 2.86 and standard deviation of 0.73 with a mean gain of 0.035, this indicated that students performance from the rural areas after the COVID – 19 pandemic is higher than the one before the pandemic.

### Hypotheses Testing

H<sub>01</sub> There is no significant difference in the impact of COVID – 19 pandemic on the academic performance of undergraduate biology education in urban areas before and after COVID – 19 pandemic school lock-down in North-East Nigeria. A paired samples t – test was performed to compare urban biology education students' academic performance before and after COVID – 19 and the result was presented in table 3

**Table 3: Paired sample t – test result on academic performance of students in urban areas.**

Variable	N	Mean	SD	t-cal	Df	P-value	remark
GPA before pandemic	128	2.52	0.72				
GPA after pandemic		0.57	0.73				
							significant
						-3.34	127 0.001

The result in table 3 reveals that there was a significant difference in urban students' academic performance before COVID – 19 (M 2.53, SD 0.72 0.72) and after COVID -19 (M 2.57, SD 0.73);  $t(127) = t=3.34$ ,  $p = 0.001$ . Therefore, the null hypothesis which states that there is no significant difference in the impact of COVID-19 school lock-down on the academic performance of undergraduate biology education students in urban areas in North-east Nigeria before and after CCOVID-19 is rejected.

H0<sub>2</sub> There is no significant difference in the academic performance of undergraduate biology education students from rural areas before and after COVID-19 school lock- down in North – East Nigeria.

To test the above hypothesis, a paired samples t- test was performance to compared rural biology education students' academic performance before and after COVID-19 and the result is presented in table 4.

**Table 4: Paired sample t-test result on academic performance of the students from rural areas.**

Variable	N	Mean	SD	t-cal	Df	P-value	remark
	128	2.86	0.72				
				-3.102	127	0.002	significant
GPA after pandemic	128	0.57	0.73				

The result showed that there was a significant difference in the academic performance of students from rural areas before COVID-19 pandemic school lock-down (M=2.86, SD=0.72) and after COVID-19 school lock-down (M=2.89, SD=0.73;  $t(127) = t= 3.102$ ,  $p=0.002$ ). Hence, the null hypothesis which states that there was a significant difference in the impact of COVID-19 pandemic on the academic performance of undergraduate biology education students in rural areas in North-East Nigeria is rejected in favour of the alternative hypotheses; therefore it was concluded that there is a significant difference.

### Discussion of Findings

The study revealed that students from both urban and rural areas recorded an increased academic performance in the semester after the pandemic (2021) compared to the semester before the pandemic (2019). This result confirm the findings of Vargas-Ramos et al., (2021) who investigated students' academic performance during COVID-19 pandemic and its relationship with demographic factors and alcohol consumption among college students and found that students reported an increase in academic performance during

quarantine period. This is also in line with the findings of (Alghamdi, 2020). Who found that the pandemic only had a negative impact on students' social life while their educational life (academic performance) was not affected. This result is also in line with the findings of (Supriya, 2021) who reported that students received higher grades during COVID-19 but perceive it of negative effects on learning. However, the findings of the study is contrary to the work of (Mohamad, 2020) who investigated the impact of COVID-19 pandemic on the academic performance of veterinary medical students in Egypt and found that COVID-19 pandemic affected the academic performance of students with varying degree.

Result of the present study is in agreement with the work of Osamudiamen et al., (2020) who assessed the impact of COVID-19 pandemic school-lockdown on education and found that students had significantly higher marks in all courses compare to previous session. This improvement in academic performance after school extended closures could be attributed to learning environment or changes in lecturers' mode of assessment.

### **Recommendations**

Based on the findings of this study, the following recommendations were made;

1. Universities should design a proper framework for education improvement and activities during global health crises.
2. The impact of COVID-19 pandemic school lock-down should also be view from social aspect of students' life other than their academic performance
3. Future studies should find out factors responsible for students high performance after COVID-19 school lock-down.

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