



PERCEIVED EFFECT OF COVID-19 PANDEMIC ON THE USE OF DISTANCE LEARNING TOOLS AMONG STUDENTS OF COLLEGE OF AGRICULTURAL SCIENCES OLABISI ONABANJO UNIVERSITY



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Abstract:

This study focused on perceived effect of Covid-19 pandemic on the use of distance learning tools among students of College of Agricultural Sciences, Olabisi Onabanjo University. Questionnaire was used to collect data from 145 students on demographic characteristics, awareness and level of use of distance learning tools, perception of the effects of COVID-19 pandemic and constraints to the use of distance learning tools.

Results reveal that the average age of students was 24 years. Over half (54.5%) of the students were female. Majority (97.2%) of the students were single and had average month allowance of ₦20,634.48. Distance learning tools used by students during COVID-19 pandemic were Microsoft teams (1.45), Zoom (0.47) and Google classroom (0.38). Judging from the average mean score, distance learning tools was utilized during COVID-19 pandemic (2.69) than before COVID-19 pandemic (1.31). The most severe constraints to the use of distance learning tools as perceived by the students were poor power supply and unsubsidized data for lecturers and students to aid online education. Over half (51.0%) of the students had low level of perception of the effects of distance learning tools. The most severe constraint to the use of distance learning tools were poor power supply ($\bar{x} = 1.51$) and unsubsidized data to aid online education ($\bar{x} = 1.50$). Also, there was significant relationship between perceived effects of COVID-19 pandemic on the use of distance learning tools and age, sex, marital status and constraints.

In conclusion, government should embark on rural electrification of the study area to ensure steady power supply, while parents and guardians should assist students to ensure data subscription for effective use of online tools.

Key words:

Perceived effect, COVID 19 pandemic, use and distance learning tools

Introduction

Corona virus became known when it was identified as the causative agent in reported cases of patients with pneumonia admitted in hospitals in Wuhan, China, in December 2019 (Munster *et al.* 2020; Zhu *et al.* 2020). This disease is spread through airborne zoonotic droplet, and people can get infected when in close contact with the cough and sneeze of persons who have symptoms of the virus (Kumar *et al.* 2020). In March 12 2020, the World Health Organization officially declared COVID-19 also known as corona virus a pandemic (WHO, 2020). COVID-19 pandemic has created the largest disruption of education systems in human history, affecting nearly 1.6 billion learners in more than 200 countries. Due to this pandemic, educational institutions in most countries around the world were closed. Data from UNESCO shows that the peak in closure of schools was at the beginning of April 2020, when about 1.6 billion students were affected across 194 countries (UNESCO, 2020). In March 2020, the Federal Ministry of Education in Nigeria directed the closure of all schools within the country. Closures of schools, institutions and other learning spaces have impacted more than 94% of the world's student population. This has brought far-reaching changes in all aspects of our lives. Social distancing and restrictive movement policies have significantly disturbed traditional educational practices. COVID-19 pandemic has affected agricultural studies at higher education in Nigeria. The closure of schools meant that administrators of higher

education had to come up with strategies to ensure that learning continues during the lockdown. Some Nigerian universities particularly the privately owned universities quickly moved from traditional face-to-face teaching method to remote education. As the period of total lockdown extended, more universities quickly switched to online teaching. Both the lecturers and students had to adapt swiftly to the new mode of education as they were trained virtually on how to use distance learning tools. Lecturers and students faced challenges in adapting to online classes and maintaining the minimal communication to support learning and development. Migrating to remote learning within a short period was difficult, especially in a developing country like Nigeria where advanced technology has not been well integrated into the educational system.

Several universities in Nigeria did not prepare for any contingency that may affect education such as COVID-19 pandemic lockdown; however, the management teams of some institutions were able to provide guidance and support to ensure that learning activities continued and students were assessed online. This was mostly possible because school closure occurred in an era when technological innovations and digitalization in educational context are readily available.

Reopening of schools after relaxation of restriction is another challenge with many new standard operating procedures put in place.

As schools have been closed to cope with the global pandemic, students, parents and educators around the globe have felt the unexpected ripple effect of the COVID-19 pandemic. While governments, frontline workers and health officials are doing their best slowing down the outbreak, education systems are trying to continue impacting quality education for all during these difficult times. Many students at home/living space have undergone psychological and emotional distress and have been unable to engage productively. The best practices for online homeschooling are yet to be explored (Petrie, 2020). The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners. Some of the online platforms used so far include unified communication and collaboration platforms such as Microsoft Teams, Google Classroom, Canvas, Coursera, Edpuzzle, Edmodo, Socrative, Loom, Zoom, Pear Deck and Blackboard, which allow the teachers to create educational courses, training and skill development programmes (Petrie, 2020). They include options of workplace chat, video meeting and file storage that keep classes organized and easy to work. They usually support the sharing of a variety of content like Word, PDF, Excel file, audio, videos and many more. These also allow the tracking of student learning and assessment by using quizzes and the rubric-based assessment of submitted assignments. The flipped classroom is a simple strategy for providing learning resources such as articles, pre-recorded videos and YouTube links before the class. The online class time is then used to deepen understanding through discussion with faculty and peers (Doucetet *al.*, 2020). This is a very effective way of encouraging skills such as problem-solving, critical thinking and self-directed learning. The virtual classroom platforms like video conferencing (Google Hangouts Meet, Zoom, Slack, Cisco, WebEx) and customizable cloud-based learning management platforms such as Elias, Moodle, BigBlueButton and Skype are increasingly being used. There was a fear of losing 2020 academic year or even more in the coming future. The need of the hour is to innovate and implement alternative educational system and assessment strategies. The COVID-19 pandemic has provided us with an opportunity to pave the way for introducing digital learning. On the other hand, the level of academic performance of the students is likely to drop for the classes held for both year-end examination and internal examination due to reduced contact hour for learners and lack of consultation with teachers when facing difficulties in learning/understanding (Sintema, 2020). The closure of Schools, Colleges and Universities by the Federal and State government was an urgent need which prevailed in most States in Nigeria. Nigerian Government has started taking preventive decisions on COVID-19 just after WHO recognized it as a pandemic disease. With the availability of distance educational learning tools, the users -both educators and learners-face frequent hiccups while using it or referring to these tools. Some challenges have been identified by many researchers; broadly identified challenges with the use of distance learning tools are accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy (Murgatrot, 2020).

Nigerian Universities suffer setback owing to the fact that Nigeria's education system is still largely built around traditional pedagogical learning, which is more focused on the physical learning environment. The education system and the educators have adopted "Education in Emergency" through various online platforms and are compelled to adopt a system that they are not prepared for. However, the outbreak of COVID-19 has revealed the inadequacies of this mode of education. Considering this, the study was conducted to critically assess the perceived effects of COVID-19 pandemic on the use of distance learning tools among agricultural students of Olabisi Onabanjo University. The following research questions were formulated to guide the study:

- i. What are the socio-economic characteristics of students in the study area?
- ii. What is the level of awareness of distance learning tools among students before COVID-19 pandemic?
- iii. What is the level of use of distance learning tools before and during COVID-19 pandemic?
- iv. What are the perceptions of effects of the use of distance learning tools in the study area?
- v. What are the constraints to the use of distance learning tools in the study area?

Objectives of the study

The broad objective of the study is to assess perceived effects of Covid-19 pandemic on the use of distance learning tools among students of College of Agricultural Sciences, Olabisi Onabanjo University. Specifically, the study attempts to:

1. describe socio-economic characteristics of students in the study area.
2. investigate awareness of distance learning tools among students before COVID-19 pandemic in the study area
3. determine level of use of distance learning tools before and during COVID-19 pandemic in the study area
4. examine perception of the effect of distance learning tools in the study area.
5. identify constraints to the use of distance learning tools in the study area.

Hypotheses of the study

The following are the hypotheses of the study, and they are stated in null form;

H0₁: There is no significant relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and students' socio-economic characteristics.

H0₂: There is no significant relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and its constraints.

H0₃: There is no significant difference between pre and post-covid 19 use of distance learning tools among students in the study area

Significance of the study

The current challenge of COVID 19 pandemic vis-a-vis poor utilization of distance learning tools among students of tertiary institutions in Nigeria is on the increase. Despite this challenge, there is limited information on how the pandemic affected students' use of distance learning tools at all levels in Nigeria universities. Hence, it is important to understand

the effect of COVID-19 pandemic on the use of distance learning tools among tertiary institutions in Nigeria. Also, this study strengthens the growing body of literature on the COVID-19 pandemic by analyzing level of use of COVID 19 pandemic before and during COVID-19 outbreak, awareness and peoples' perception.

The outcome of this study is of benefit to researchers, governments, academics, students, policy makers on students' learning tools (especially in the areas of agriculture) and can be used as coping measures during COVID-19 pandemic. Similarly, findings from this research serves as a reference material for further research study.

Methodology

Study area

The study area is College of Agricultural Sciences, Olabisi Onabanjo University, Ayetoro Campus, Ogun State. The school is located in Yewa North Local Government Area of Ogun state. College of Agricultural Sciences, OOU is in Ayetoro which lies on latitude 7° 15' N and longitude 3° 3' E in a deciduous savannah zone of Ogun State. The climate is sub-humid tropical with a long time average annual rainfall of 1,909.30mm. This college is made up of two (2) Faculties namely; Faculty of Agricultural Management and Rural Development (FAMARD) and Faculty of Agricultural Production and Renewable Resources (FAPRER).

Faculty of Agricultural Management and Rural Development (FAMARD) is composed of three (3) Departments, which are Department of Agricultural Economics and Farm Management (AEM), Department of Agricultural Extension and Rural Sociology (AXR), and Department of Home and Hotel Management (HHM). Faculty of Agricultural Production and Renewable Resources (FAPRER) is also composed of four (4) Departments which are Department of Animal Production (ANP), department of Crop Production (CRP), department of Forestry and wildlife Management (FWM), and Department of Fisheries Management.

Population of the Study

The target population of this study consists of undergraduate students of Olabisi Onabanjo University, College of Agricultural Sciences.

Sampling Technique and Sample Size

Stratified random sampling technique was used to select 9% of 1,605 undergraduate students across departments in College of agricultural Sciences, Olabisi Onabanjo University. College of Agricultural Sciences has two (2) Faculties. The Faculties are Faculty of Agricultural Management and Rural Development (FAMARD) and Faculty of Agricultural Production and Renewable Resources (FAPRER). The sampling (i.e 9% of 1,605) across departments in each of the two (2) faculties produced a sample size of 145 respondents which constituted sample size for the study.

Result and Discussion

Socio-economic characteristics of students

Result in Table 1 reveals that majority (75.9%) of the respondents were between 22 to 27 years with an average of 24 years. The higher percentage of less than 28 years attests to respondents' youthfulness. Students within this age bracket adopt and utilize distance learning tools more efficiently and effectively compared with older generations. Table 1 shows that over half (54.5%) of the students were female while 45.5% were male. This implies that there was dominance of female in the study area. Result in Table 1 further indicates that majority (97.2%) of the students were single while only 2.8% were married. This is not a surprise as the respondents were students and were still very young. Distribution of respondents base on religion shows that majority (55.9%) of the students practiced Christianity, while 44.1% practiced Islam.

Result in Table 1 shows that over half (51.0%) of the students earned monthly allowance below ₦15,000, about 33.8% of the sampled respondents in the study area earned between ₦15,100 to ₦30,000 as monthly allowance, while 15.2% collected above ₦30,000. The average allowance was ₦20,634.48.

Result also reveals that about 38.6% of the respondents have been vaccinated against COVID-19 pandemic, only 1.4% of the student had symptoms of COVID-19 pandemic since resumption for physical class while only 15.2% did not comply with COVID-19 prevention protocols.

Table 1: Students' personal characteristics (n = 145)

Variables	Frequency	Percentage	Mean
Age			
19 – 21	21	14.4	24.06
22 – 24	70	48.3	
25 – 27	40	27.6	
> 27	14	9.7	
Sex			
Male	66	45.5	
Female	79	54.5	
Marital status			
Single	141	97.2	
Married	4	2.8	
Religious status			
Christianity	81	55.9	
Islam	64	44.1	
Monthly allowance			
≤ 15,000	74	51.0	20,634.48
15,100-30,000	49	33.8	
>30,000	22	15.2	
Have you been vaccinated against COVID-19 pandemic?			
NO	89	61.4	
YES	56	38.6	
Have you had symptoms of COVID-19 pandemic since resumption for physical class?			
NO	143	98.6	
YES	2	1.4	
Do you comply with COVID-19 prevention protocols?			
No	22	15.2	
Partially	78	53.8	
Fully	45	31.0	

Source: Field survey, 2021.

Awareness of distance learning tools among students before COVID-19 pandemic

Table 2 reveals the distance learning tools; the students are aware of before COVID-19 pandemic and it shows that Zoom (41.4%), Google classroom (35.2%) and Microsoft teams (33.1%) were the distance learning tools, the students were aware of before COVID-19 pandemic.

Table 2: Distribution of Students according to their awareness of distance learning tools before COVID-19 Pandemic

Distance Learning Tools	Frequency	Percentage
1 Microsoft teams	48	33.1
2 Edmodo	2	1.4
3 Google classroom	27	18.6
4 Zoom	35	24.1
5 Khan Academy	2	1.4
6 Canvas	8	5.5
7 Coursera	9	6.2
8 Edpuzzle	6	4.1
9 Socrative	5	3.5
10 Loom	3	2.1

Source: Field survey, 2021.

Level of use of distance learning tools before and during COVID-19 pandemic

As shown in Table 3, distance learning tools used by students before COVID-19 pandemic were Microsoft teams ($\bar{x} = 0.36$), Zoom ($\bar{x} = 0.28$) and Google classroom ($\bar{x} = 0.27$). The distance learning tools used by student during COVID-19 pandemic were Microsoft teams ($\bar{x} =$

1.45), Zoom ($\bar{x} = 0.47$) and Google classroom ($\bar{x} = 0.38$). This implies that Microsoft teams, Zoom and Google classroom were the major distance learning tools utilized by the student before and during COVID-19 pandemic. Judging from the average mean score, distance learning tools was utilized during COVID-19 pandemic ($\bar{x} = 2.69$) than before COVID-19 pandemic ($\bar{x} = 1.31$).

Table 3: Level of use distance learning tools before and during COVID-19 pandemic

Distance Learning Tools	Before COVID-19 pandemic			During COVID-19 pandemic			Mean	Mean
	Level of use			Level of use				
	Always	Partially	Not	Always	Partially	Not		
1 Microsoft teams	16.2	4.1	79.7	0.36	47.3	50.0	2.7	1.459
2 Edmodo	-	1.4	98.6	0.01	-	2.7	97.3	0.03
3 Google classroom	9.5	8.1	82.4	0.27	6.8	24.3	68.9	0.38
4 Zoom	6.8	14.9	78.4	0.28	6.8	33.8	59.5	0.47
5 Khan Academy	1.4	-	98.6	0.03	1.4	5.4	93.2	0.08
6 Canvas	-	5.4	94.6	0.05	1.4	4.1	94.6	0.07
7 Coursera	-	2.7	97.3	0.03	-	6.8	93.2	0.07
8 Edpuzzle	4.1	2.7	93.2	0.11	1.4	2.7	95.9	0.05
9 Socrative	2.7	5.4	91.9	0.11	1.4	2.7	95.9	0.05
10 Loom	1.4	2.7	95.9	0.05	-	4.1	95.9	0.04
Average mean score				1.31				2.69

Source: Field survey, 2021.

Perception of the effect of distance learning tools

Table 4 shows perception of the effect of distance learning tools. Using the mean scores to rank the order to which the respondents perceived the effect of distance learning tools, the following ranks were obtained. COVID-19 pandemic has made my institution to change from physical to virtual learning ($\bar{x} = 3.88$), use of distance learning tools is preferred over physical class due to COVID-19 pandemic ($\bar{x} = 3.82$), lecturers discuss many topics in a short period of time with the use of distance learning tools during COVID-19 pandemic ($\bar{x} = 3.65$), lecturer-students interactions is limited when using distance learning tools ($\bar{x} = 3.50$), feeling sleepy in class while using distance learning tools during COVID-19 pandemic ($\bar{x} = 3.36$), E-learning is useful in grasping new skills ($\bar{x} = 3.36$), there is so much comfort using distance learning tools during COVID-19 pandemic ($\bar{x} = 3.32$), Online learning tools

provides flexibility, convenience, ability to complete unit work at own pace ($\bar{x} = 3.27$), Using the online units was an effective way to learn ($\bar{x} = 3.24$), the time schedule for lecture is not always followed during COVID-19 pandemic ($\bar{x} = 3.23$), I feel that face-to-face contact with my instructor is not necessary for learning to occur ($\bar{x} = 3.16$), use of distance learning tools affects Continuous Assessment grading ($\bar{x} = 3.12$), I don't have a comfortable place to study using distance learning tools during COVID-19 pandemic ($\bar{x} = 3.07$), and I do not always listen during online lectures during COVID-19 ($\bar{x} = 3.04$). Overall, Table 5 shows over half (51.0%) of the students had low level of perception of the effect of distance learning tools, while about 49.0% had high perception of the effect of distance learning tools. The study was in line with Abbasi *et al* (2020), Adnan & Anwar (2020) on perceptions of students regarding e-learning during COVID-19.

Table 4: Perception of the effect of distance learning tools

Perceptual statement	SA	A	U	D	SD	Mean
1 COVID-19 pandemic has made my institution to change from physical to virtual learning.	29.7	41.9	16.2	10.8	1.4	3.88
2 I do not always listen during online lectures during COVID-19.	4.1	40.5	16.2	33.8	5.4	3.04
3 Use of distance learning tools is preferred over physical class due to COVID-19 pandemic.	6.8	40.5	18.9	23.0	9.5	3.82
4 Lecturer-students interactions is limited when using distance learning tools	14.9	43.2	20.3	20.3	1.4	3.50
5 Use of distance learning tools affects Continuous Assessment grading	10.8	25.7	29.7	32.4	1.4	3.12
6 Lecturers discuss many topics in a short period of time with the use of distance learning tools during COVID-19 pandemic.	21.6	45.9	8.1	24.3	-	3.65
7 Feeling sleepy in class while using distance learning tools during COVID-19 pandemic.	16.2	36.5	17.6	27.0	2.7	3.36
8 I don't have a comfortable place to study using distance learning tools during COVID-19 pandemic.	9.5	33.8	16.2	35.1	5.4	3.07
9 The time schedule for lecture is not always followed during COVID-19 pandemic.	20.3	24.3	17.6	33.8	4.1	3.23
10 Online learning tools provides flexibility, convenience, ability to complete unit work at own pace	8.1	44.6	18.9	23.0	5.4	3.27
11 E-learning is useful in grasping new skills	13.5	43.2	12.2	28.4	2.7	3.36
12 There is so much comfort using distance learning tools during COVID-19 pandemic.	21.6	24.3	23.0	27.0	4.1	3.32
13 Using the online units was an effective way to learn	9.5	40.5	20.3	24.3	5.4	3.24
14 I feel that face-to-face contact with my instructor is not necessary for learning to occur	9.5	37.8	17.6	29.7	5.4	3.16
15 I have deeper knowledge about the course content in an online environment.	10.8	24.3	21.6	35.1	8.1	2.95

Source: Field survey, 2021.

Table 5: Perception index

Variables	Frequency	Percentage
Low	74	51.0
High	71	49.0
Total	145	100.0

Source: Field survey, 2021

Constraint to the use distance learning tools

Table 6 shows that the most severe constraint to the use of distance learning tools as perceived by the students are poor power supply ($\bar{x} = 1.51$), data was not subsidized for lecturers and students to aid online education ($\bar{x} = 1.50$), high internet access tariffs ($\bar{x} = 1.47$), lack of IT skills

($\bar{x} = 1.32$), students have not been trained on the use of online applications for e-learning ($\bar{x} = 1.24$), unavailability of support Infrastructure ($\bar{x} = 1.20$) and unwillingness to adopt online learning ($\bar{x} = 1.18$).

Table 6: Distribution of Respondents according to Constraints to the use of Distance Learning Tools

Constraints	Major	Minor	Not a constraint	Mean
1 Students have not been trained on the use of online applications for e-learning.	39.2	45.9	14.9	1.24
2 Data was not subsidized for lecturers and students to aid online education.	58.1	33.8	8.1	1.50
3 Unwillingness to adopt online learning	35.1	47.3	17.6	1.18
4 Unavailability of support Infrastructure	39.2	41.9	18.9	1.20
5 High internet access tariffs	60.8	25.7	13.5	1.47
6 Lack of IT skills	41.9	48.6	9.5	1.32
7 Poor power supply	60.8	29.7	9.5	1.51
8 Distance learning tools are not updated regularly	25.7	52.7	21.6	1.04
9 Complexity of Distance learning tools (such as Microsoft teams)	31.1	44.6	24.3	1.07
10 Possibility of distractions from other family members and due to the use of mobile phones	32.4	43.2	24.3	1.08

Source: Field survey, 2021.

Hypotheses testing

Relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and students' socio-economic characteristics

Result in Table 7 shows that there was significant relationship between the perceived effect of COVID-19 pandemic on the use of distance learning tools and students' socio-economic characteristics such as: age ($\chi^2=25.577$; $p\leq 0.05$), sex ($\chi^2=4.441$; $p\leq 0.05$) and marital status ($\chi^2=3.947$; $p\leq 0.05$). This implies that age, sex and marital status were the socio-economic factors influencing perceived effect of COVID-19 pandemic on the use of distance learning tools.

Relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and its constraints

Table 8 shows that significant relationship existed between perceived effect of COVID-19 pandemic on the use of distance learning tools and its constraints. The only constraint that significantly influence the perceived effect of COVID-19 pandemic on the use of distance learning tools was unavailability of support Infrastructure ($r= 0.278$; $p<0.05$).

Table 7: Chi-square relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and students' socio-economic characteristics

Variables	Level of perception		χ^2 Value	df	p value	Remark
	Low (%)	High (%)				
Age			25.577*	3	0.000	Significant
19 - 21yrs	6 (8.1)	15 (21.1)				
22 - 24yrs	26 (35.1)	44 (62.0)				
25 - 27yrs	30 (40.5)	10 (14.1)				
Above 27yrs	12 (16.2)	2 (2.8)				
Sex			4.441*	1	0.035	Significant
Male	40 (54.1)	26 (36.6)				
Female	34 (45.9)	45 (63.4)				
Marital status			3.947*	1	0.047	Significant
Single	70 (94.6)	71 (100.0)				
Married	4 (5.4)	0 (0.0)				
Religion			0.793	1	0.373	Not Significant
Christianity	44 (59.5)	37 (52.1)				
Islam	30 (40.5)	34 (47.9)				
Income (₦)			2.245	2	0.325	Not Significant
≤ 15,000	34 (45.9)	40 (56.3)				
15,100-30,000	26 (35.1)	23 (32.4)				
>30,000	14 (18.9)	8 (11.3)				

Source: Field Survey, 2021

Significant @ $p \leq 0.05$ level**Table 8: Correlation analysis of the relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and its constraints**

Constraints	r value	p-value	Remark
Students have not been trained on the use of online applications for e-learning.	0.133	0.110	Not Significant
Data was not subsidized for lecturers and students to aid online education.	0.032	0.699	Not Significant
Unwillingness to adopt online learning	0.150	0.071	Not Significant
Unavailability of support Infrastructure	0.278**	0.001	Significant
High internet access tariffs	-0.161	0.054	Not Significant
Lack of IT skills	-0.129	0.123	Not Significant
Poor power supply	0.037	0.660	Not Significant
Distance learning tools are not updated regularly	0.112	0.182	Not Significant
Complexity of Distance learning tools (such as Microsoft teams)	0.100	0.232	Not Significant
Possibility of distractions from other family members and due to the use of mobile phones	0.151	0.070	Not Significant

Source: Field Survey, 2021

Significant @ $p \leq 0.05$ level

marital status and constraint to the use of distance learning tools such unavailability of support infrastructure.

Conclusion and Recommendations

The study concluded that most students the study area were predominantly females and very young. Overall, over half of the students had low level of perception of the effect of distance learning tools. Also, there was significant relationship between perceived effect of COVID-19 pandemic on the use of distance learning tools and age, sex,

Government should embark on rural electrification of the study area to ensure steady power supply, while parents and guardians should assist students to ensure data subscription for effective use of online tools. Also, there is need for provision of adequate infrastructure and support services to cater for unforeseen circumstances such as COVID 19 pandemic.

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