

**INFLUENCE OF COVID-19 ON LEARNING  
OPPORTUNITIES FOR VISUALLY IMPAIRED  
STUDENTS IN TERTIARY INSTITUTIONS IN RIVERS  
STATE**

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**Abstract**

COVID-19 brought in its wake, various impacts on human lives across various domains including education. This cross-sectional survey investigates the influence of COVID-19 on learning opportunities for visually impaired students in Nigerian universities. It explores the provided learning opportunities and the coping strategies adopted by the students during the pandemic. Participants were 40 visually impaired students from the University of Port Harcourt and Ignatius Ajuru University of Education. Data collection occurred through a structured questionnaire. Findings indicated that COVID-19 significantly impacted the learning opportunities for visually impaired students (78.75% agreed); students had fair learning opportunities through online platforms with magnified interfaces and some level of support (64.38% agreed); and research subjects adopted various coping strategies like early morning studies and assistance from family/friends (56.25% agreed). The study concluded that while the pandemic negatively affected learning opportunities, alternative methods like online platforms provided some level of accessibility for visually impaired students. Recommendation for educational policy formulation and implementation was made among others.

**Keywords:** COVID-19, Learning Opportunities, Visual Impairment, Tertiary Institutions, Rivers State

## **Introduction**

With increase in human activities due to geometric rise in population across all nations of the world, emergence of both contagious and non-contagious diseases has been witnessed (Verikios, 2020; Hui, 2006; Keni et al., 2020; World Health Organisation [WHO], 2018). Albeit many pathogenic diseases such as smallpox, chickenpox, Ebola disease, bird flu, tuberculosis, cholera among others have surface in our various societies over the years, they have not been so fatal as coronavirus disease, a severe acute respiratory syndrome (SARS-COV 2) or COVID-19 (Hodgens & Gupta, 2023; Morens&Fauci, 2020).

Al-Rohaimi and Otaibi (2020) reported that, in December 2019, a novel strain of coronavirus, severe acute respiratory syndrome was identified in Wahan, China and continue to spread globally. The disease was no respecter of age, class or sex, as both young and old, rich and poor, male or female were vulnerable when contacted (Kharroubi&Diab-El-Harake, 2022). Vulnerable populations such as persons with disabilities (visually impaired inclusive) are often marginalized, economically disempowered, experience poor social conditions, lack access to health care, education and other social services during the pandemic (Sarker et al., 2022; United Nations[UN], 2020). Consequently, the World Health Organization (WHO) in May 2020 released a policy brief to ensure disability inclusion in the Covid-19 response and recovery (UN, 2020). For Odukoya et al (2020), the coronavirus disease in 2019 outbreak in Nigeria was reported first on the 27<sup>th</sup> day of February, 2020 and 95 days after it had spread to 35 states and the nation's capital, Abuja with 10162 confirmed cases.

Like any other deadly virus disease, Covid-19 has higher negative impact on patients in contact. Though, it is claimed that the strength of one's immune system is the determinant of its efficacy, without urgent medication, death was the ultimate end. Its spreading was accelerated through air, contact and fluids which do not have higher potency to kill its geometric reproduction or spreading (Keni et al., 2020). It is perceived to be a general population problem (inclusive of students with visual impairment). In fact, it spreads like wildfire, hence, both the federal and state government had to impose curfew, spacing distance between two or more people and the use of hand sanitizers besides nose masks as urgent preventive measures (Tambe, 2022). To further curtail the spread of

COVID-19 and protect the populace especially learners, governments in Nigeria took measures in tandem with other governments across the globe and shutdown all physical in-person schooling activities, consequently forcing educational institutions to resort to alternative means of services delivery and thereby restricting learning opportunities (Ebohon et al., 2021; Okagbue et al., 2023).

It is assumed that learning opportunity comprised modalities for delivery of any course of study, instruction, education, or training including distance learning, electronic learning in addition to correspondence courses made available by learning institutions or providers. A variety of learning opportunities or experiences can be deployed in various learning environments. For the Nursing and Midwifery Council (2019) some of these learning opportunities include, classroom learning, group learning, one-on-one learning, peer-to-peer learning among others. In order to continue the process of teaching, training and learning in Nigerian institutions to all students, certain learning opportunities were provided. These in line with global practices are mainly online learning, in-person or face-to-face learning, and a combination of online learning and face-to-face learning which is commonly referred to as hybrid learning. Whereas face-to-face learning is the traditional in-person classroom model, online is the application of electronic media, tools, and related architectures such as the internet for the delivery of curriculum while hybrid learning is a blend of the former and latter (Amka&Dalle, 2022; Calli et al., 2013; Correa-Torres & Muthukumaran, 2022). An analysis of the supply and demand sides of education in Nigeria in the wake of the pandemic revealed that the learning opportunities available for learners (those with visual impairment inclusive) were mainly electronic or online models in addition to social and traditional media platforms (The Education Partnership Centre & Nigerian Economic Summit Group, 2020). A further peep into the composition of these learning opportunities indicated internet platforms and services such as Google Classroom, School Gate, Mobile Classroom, YouTube, E-mail, Radio, Television, in addition to Zoom, Telegram, WhatsApp among others as the options available for learners during the pandemic (Adedigba, 2020; EduCeleb, 2020; Shettima et al., 2020).

Visual impairment which is also known as vision impairment or vision loss is a reduction in one's ability to see such that it causes

problems and such reduction in ability to see cannot be corrected by usual means, such as glasses. World Health Organization (WHO, 2021 as cited in Sukubo, 2022) admitted that, these include those who have a decreased ability to see because they do not have access to glasses or contact lenses. They noted that, visual impairment is often defined as a best corrected visual acuity ranging from worse than 6/12 to 3/60. The term blindness is used for complete or nearly complete vision loss (visual acuity worse than 3/60). Auger et al (2015) depicted that; visual impairment may cause difficulties with normal daily activities such as reading and walking without adaptive training and equipment.

Blaylock and Vogtle (2017) disclosed that the most common causes of visual impairment globally are uncorrected refractive errors (43%), cataracts (33%), and glaucoma (2%). Continuing, they noted that, refractive errors include near-sightedness, far-sightedness, presbyopia, and astigmatism. Cataracts are the most common cause of blindness. Other disorders that may cause visual problems include age-related macular degeneration, diabetic retinopathy, corneal clouding, childhood blindness, and a number of infections. Maberley et al (2006) depicted that; visual impairment can also be caused by problems in the brain due to stroke, premature birth, or trauma, among others. These cases are known as cortical visual impairment. Lehman (2012) hinted that, screening for vision problems in children may improve future vision and educational achievement. Screening adults without symptoms is of uncertain benefit.

For WHO (2021 as cited in Sukubo, 2022), the International Classification of Diseases 11 (2018) broadly categorised visual impairment into two: Distance and near presenting visual impairment.

It is instructive to mention here that visual acuity (VA) is only one factor in an individual's overall vision, and refers to the ability to discern the shapes and details of things seen (sharpness of vision). Other factors in one's overall vision include colour vision, peripheral vision, and depth perception (Harkin, 2018). The fractions in the visual acuity test results are read in feet (ft) or metre (m). The WHO (2021) fractions are in metres.

During the Covid-19 heat era, tertiary students (visually impaired inclusive) were provided with electronic teaching/learning in form of audio and zooming models over the internet, which were not without associated challenges. Visually impaired is a term used to describe an

individual who cannot see at all or someone who has partial vision loss. World Health Organization (2021 as cited in Sukubo, 2022).

In line with the foregoing thinking trajectory, this study aims to investigate, in retrospect, learning opportunities for students with visual impairment in tertiary institutions in Rivers State during COVID-19, and proffer answers to the following research questions.

1. What is the influence of COVID-19 on learning opportunities for students with visual impairment in University of Port Harcourt and Ignatius Ajuru University of Education?
2. What learning opportunities were offered to students with visual impairment in the selected universities during the COVID-19 era?
3. What coping strategies did students with visual impairment in the selected universities adopt during the COVID-19 era?

Findings from this study will be of benefit to governments, school authorities, community of students with disabilities (especially those with visual impairment), and research community.

It will enable governments to provide better learning aids for students with visual impairment in the selected tertiary institutions in order to improve their learning experiences and outcomes.

For school authorities such as Senates and Councils, findings from this study will avail them useful data/information to improve on learning-teaching methods and policies for students with visual impairment.

For the community of students with disabilities (especially those with visual impairment), findings from this study could serve as basis for awakening their zeal to learn with improved technologies, and thus better preparing them for similar situations in the future.

The research community will use related and relevant portions of findings from the study for future researches.

## **Method**

In line with Fraenkel and Wallen(2009) and V. A. Asuru (Personal Communication, April 20, 2023), this study adopted cross-sectional survey design as data for the study was collected at a point in time for two weeks. Two universities, namely, University of Port Harcourt and Ignatius Ajuru University of Education were anchored in the study. The population of the study comprised all the visually impaired students in both universities. A sample size of 40 students with visual impairment who

experienced learning during the COVID-19 era were used for the study based on chain referral (also called referral or snowball sampling technique) since the targeted respondents have rare traits and are not readily accessible in the instance (Naderifar et al., 2017) and also because official records of students with visual impairment were not readily available. A structured questionnaire titled “Visually Impaired Learning Opportunities Inventory” (VILOI) was designed and used to collect pertinent data. The questionnaire had four options labelled Strongly agree (SA), Agree (A), Disagree (D), and Strongly disagree (SD) for respondents to indicate their preferred options, and was validated by two experts, one in Measurement & Evaluation and the other in Special Needs Education. Twelve items were in the questionnaire, four on each research question.

The researchers went to the admission offices of both institutions and solicited for details of all the undergraduates with visual impairment to enable them to locate the targeted students and administer the questionnaires. Unfortunately, no proper records of students with disabilities (those with visual impairment inclusive) were readily available. Thus, the researchers resorted to community of students with disabilities in both universities and person-to-person nomination by students was utilised to snowball the sample size of 40 students with visual impairment for the study. The identified/located 40 students were then told the reason for the research, their individual consent got after assuring them of the confidentiality of their biodata, and thereafter, the questionnaires were administered to them and retrieved on the spot.

Descriptive statistics were used to answer the research questions.

## **Results**

The results of the study are presented in the tables below.

**Table 1.1:** Influence of COVID-19 on Learning Opportunities for Students with Visual Impairment in University of Port Harcourt and Ignatius Ajuru university of Education

Items	A				D				N	M	Re
	S	A	N	%	D	S	N	%			
1. COVID-19 further restricted free movement and access to my conventional classrooms of learning.	1	1	3	85	4	2	6	15	4	3.	Ac
2. I feel isolated in my learning environment or house during the pandemic.	2	1	3	92	2	1	3	7.	4	3.	Ac
3. Online delivery of curriculum during the pandemic was not as beneficial as face-to-face learning.	1	1	2	62	9	6	1	37	4	2.	Ac
4. Participation in online learning during the pandemic was further restricted owing to lack of appropriate devices, internet availability, power supply, and sighted supports.	1	1	3	75	6	4	1	25	4	3.	Ac
Total	6	5	1	78	2	1	3	21	1	3.	Ac

**Source:** Analysis of field data

Table 1.1 shows that the highest mean is 3.43 (item 2) and minimum mean is 2.83 (item3). Average mean (mean of means) is 3.14. Using a criterion mean of 2.5, all items were remarked as accepted since their calculated individual mean scores were above the criterion mean (2.5). Note that individual mean scores were calculated as [Sum of the counts of each point multiplied by the weight of each point] / total number of responses. Illustrating with Item 1: 18 responses were SA (4), 16 were A (3), 4 were D (2) while 2 were SD (1). Mean for Item 1 is  $[(18*4) + 16*3) + 4*2) + 2*1] / 40 = (72 + 48 + 8 + 2) / 40 = 130/40 = 3.25$ . The criterion mean is calculated as the sum of the weight of the points divided

by the total number of points. Therefore, the criterion mean is  $(4 + 3 + 2 + 1) / 4 = 10/4 = 2.5$ .

**Table 1.2: Learning Opportunities for Students with Visual Impairment in the Selected Universities during the Pandemic**

Items	A				D				N	M	Re
	S	A	N	%	D	S	N	%			
5. Enlarged print/magnified screens/worksheets provided in online learning platforms such as Zoom and Google Classroom during the pandemic compensated for face-to-face experiences.	1	1	2	67	7	6	1	32	4	2	Ac
6. Communications and interactions like content explanation, questions and answers, and feedbacks on online learning during the pandemic were enough and satisfactory.	1	1	2	60	6	1	1	40	4	2	Ac
7. Peer-to-peer interactions and exchange of ideas were fun and engaging in online learning platforms during the pandemic.	1	1	2	72	7	4	1	27	4	3	Ac
8. Braille use and support were marginally affected in online learning as teachers and family readily availed assistance when needed.	1	1	2	57	8	9	1	42	4	2	Ac
Total	5	4	1	64	2	2	5	35	1	2	Ac

**Source:** Analysis of field data



**Table 1.2** shows that the highest mean is 3.05 (item 7) and minimum mean is 2.67 (item8). Mean of means is 2.83. All the items were remarked accepted as their mean were above the criterion mean of 2.5.

**Table 1.3: Coping Strategies Adopted by Students with Visual Impairment during the Pandemic**

Items	A				D				N	M	Re
	S	A	N	%	D	S	N	%			
9. Additional efforts such as waking up early to prepare for online learning and late night reading were adopted during the pandemic.	1	1	2	67	8	5	1	32	4	2	Ac
10. Coaching on use of online learning tools and platforms were provided for by family and friends during the pandemic.	1	1	3	80	4	4	8	20	4	3	Ac
11. Paid itinerary teachers or support systems were provided for by family and friends during the pandemic.	1	7	1	42	8	1	2	57	4	2	Rej
12. Additional resources and tools such as image to text converters were used to support learning during the pandemic.	8	6	1	35	1	1	2	65	4	2	Rej
Total	5	4	9	56	3	4	7	43	1	2	Ac

**Source: Analysis of field data**

**Table 1.3** indicates that the highest mean is 3.15 (item 10) and minimum mean is 2.15 (item12). Mean of means is 2.63. Items 9 and 10 were remarked accepted as their mean were above the criterion mean of 2.5, while items 11 and 12 were remarked rejected as their mean were below criterion mean of 2.50.

### **Discussion**

Table 1.1 indicated that for Item 1, most of the respondents (85%, that is, 18 and 16) strongly agreed and agreed that COVID-19 further restricted free movement and access of students with visual impairment to their conventional classrooms of learning. Four and two (15%) respondents disagreed and strongly disagreed with the opinion. Item two showed that 21 and 16 (92.5%) respondents strongly agreed and agreed that students with visual impairment feel isolated in their learning environments or houses during the pandemic. Two and one (7.5%) respondents disagreed and strongly disagreed with the suggestion. It was also revealed that, majority (62.5%, that is, 14 and 11) respondents strongly agreed and agreed that online delivery of curriculum during the pandemic was not as beneficial as face-to-face learning for students with visual impairment (Item 3). However, nine and six (37.5%) respondents disagreed and strongly disagreed with the idea. Item four indicated that 16 and 14 (75%) respondents strongly agreed and agreed that participation in online learning for students with visual impairment during the pandemic was further restricted owing to lack of appropriate devices, internet availability, power supply, and sighted supports but six and four (25%) respondents disagreed and strongly disagreed with the suggestion indicating that they had access to appropriate devices, internet availability, power supply, and sighted supports. The average mean (mean of means) was 3.14 with a total average response of 78.75% (69 and 57) strongly agreeing and agreeing to all four items on research question 1. In conclusion, COVID-19 substantially (78.75%) influenced learning opportunities for students with visual impairment in University of Port Harcourt and Ignatius Ajuru University of Education.

On table 1.2, it was discovered that Majority (that is, 67.5% 15 and 12) respondents strongly agreed and agreed that during the pandemic, enlarged print/magnified screens/worksheets provided in online learning

platforms such as Zoom and Google Classroom compensated for face-to-face experiences for students with visual impairment (Item 5). Seven and six (32.5%) respondents disagreed and strongly disagreed with the notion. 14 and 10 (60%) respondents strongly agreed and agreed that communications and interactions like content explanation, questions and answers, and feedbacks on online learning during the pandemic were enough and satisfactory to students with visual impairment (Item 6) while Six and 10 (40%) respondents disagreed and strongly disagreed with the view. Item 7 indicated that 17 and 12 (72.5%) respondents strongly agreed and agreed that peer-to-peer interactions and exchange of ideas were fun and engaging in online learning platforms for students with visual impairment during the pandemic while seven and four (27.5%) respondents disagreed and strongly disagreed with the suggestion. Item 8 showed that thirteen and ten (57.5%) respondents strongly agreed and agreed that Braille use and support for students with visual impairment were marginally affected in online learning as teachers and family readily availed assistance when needed while eight and nine (42.5%) respondents disagreed and strongly disagreed with the idea. The average mean was 2.83 with a total average response of 64.38% (59 and 44) strongly agreeing and agreeing to all four items on research question 2. In conclusion, students with visual impairment in the selected universities had substantial fair learning opportunities (64.38%) during the COVID-19 era. The findings could be as a result of the fact that parents/families and friends of students with visual impairment did their best by providing alternative measures and supports for their children/wards to learn like their sighted counterparts.

Table 1.3 indicated that 14 and 13 (67.5%) respondents strongly agreed and agreed that additional efforts such as waking up early to prepare for online learning and late night reading were adopted during the pandemic by students with visual impairment (Item 9), while eight and five (32.5%) respondents disagreed and strongly disagreed with the opinion. On item 10, 18 and 14 (80%) respondents strongly agreed and agreed that coaching on use of online learning tools and platforms were provided for students with visual impairment by family and friends during the pandemic, while 4 respondents each (20%) disagreed and strongly disagreed with the idea. 10 and seven respondents (42.5%) strongly agreed and agreed that paid itinerant teachers or support systems were

provided for students with visual impairment by family and friends during the pandemic (Item 11), while eight and 15 (57.5%) respondents disagreed and strongly disagreed with the opinion. Finally, Item 12 indicated that eight and six (35%) respondents strongly agreed and agreed that additional resources and tools such as image to text converters were used by students with visual impairment to support learning during the pandemic, while 10 and 16 (65%) respondents disagreed and strongly disagreed with the suggestion. The average mean (mean of means) is 2.63 with a total average of 56.25% (50 and 40) responses strongly agreeing and agreeing with all the items on research question 3. In conclusion, students with visual impairment in the selected universities (56.25%) did adopt coping strategies during the COVID-19 era. These results may not be unconnected with efforts of parents/guardians as well as other significant others made to ensure that their children/wards get or receive proper education during the pandemic. These efforts were manifested in the provision of needed devices as well as support resources for their affected children/wards.

### **Conclusion**

The effects of the COVID-19 pandemic were grave on Nigeria as with other countries of the world. Students with visual impairment were among the worst hit group. With the lockdown, educational institutions had to quickly but unpreparedly resort to alternative means of providing services. Online education became the option of last resort with limiting learning opportunities for students with visual impairment especially in Nigeria. This study investigated the influence of COVID-19 on learning opportunities for visually impaired students in two Nigerian universities (University of Port Harcourt and Ignatius Ajuru University of Education, all in Rivers State). It also explored the learning opportunities provided and the coping strategies adopted by these students during the pandemic.

78.75% of respondents agreed that COVID-19 impacted learning opportunities for students with visual impairment in the selected universities with restricted movement and access to physical classrooms being major challenges. Students reported limited benefits from online learning compared to face-to-face classes (62.5% agreed). Lack of appropriate devices, internet access, and sighted support further restricted participation with 75% agreeing.

Despite the limitations, universities offered some support through enlarged print/screen materials and online platforms (67.5% agreed). Communication and interaction were perceived as somewhat adequate with 60% agreeing. Finally, students adopted various coping strategies like additional efforts (waking up early, late-night studies) and relying on family/friends for support with 80% agreeing to coaching on online tools.

Overall, while the pandemic presented significant challenges, students with visual impairment in these universities had access to some learning opportunities and adopted coping mechanisms with varying degrees of success.

### **Recommendations**

Based on findings of the study, the following recommendations are made.

1. Both the state and Federal government should intensify efforts in providing modern learning aids to visually impaired students at tertiary schools in order to streamline their learning behaviour.
2. Lecturers and students alike should be adequately trained in modern electronic teaching/learning tools and such tools should be made available for situations like COVID-19.
3. There should be regularization of electrical power in-order to aid better workings of internet computer systems for virtual learning.
4. University authorities should endeavour to build upon and provide better and effective digital learning tools, platforms, architectures, and infrastructure for better preparedness of future pandemics as well as introduction of hybrid teaching and learning.
5. Educational policy formulation and implementation at all levels should consider electronic/digital education provision as a central theme.

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