International Journal of Student Performance and Educational Research (IJSPER)
VOLUME 6 NO 1. SEPT., 2026
www.ijois.com/ijsper/
ISSN: 1595-7918

E-LEARNING FACILITIES AND ACADEMIC PERFORMANCE OF SENIOR SECONDARY SCHOOL STUDENTS IN PUBLIC SECONDARY SCHOOLS IN ABIA STATE, NIGERIA

Evoeme Bernard
Educational Administration and Planning, Faculty of Education, Abia State University, Uturu
EMAIL: bernardevoeme123@gmail.com
DOI: https://doi.org/10.5281/zenodo.23060806

ARTICLE INFORMATION

Received: 11.07.2026
Accepted: 19.08.2026
Published: 14.09.2026

KEYWORDS: e-learning facilities; e-library; computer laboratories; multimedia projectors; academic performance.

PUBLISHER: Empirical Research Institute of Nigeria – (ERIN)

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

Open Access
http://creativecommons.org/licenses/by/4.0/

ABSTRACT

This study examined the relationship between selected e-learning facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State, Nigeria. Specifically, the study examined the relationships between e-library facilities, computer laboratories, multimedia projectors and students' academic performance. A correlational research design was adopted. The population comprised 36,000 Senior Secondary School students and teachers in public secondary schools across Aba, Umuahia and Ohafia Education Zones of Abia State. A sample of 469 respondents was selected using a multistage sampling procedure, while 455 completed questionnaires were returned and used for analysis. Data were collected using the researcher-developed E-Learning Facilities and Academic Performance Questionnaire (ELFAPQ). Mean and standard deviation were used to answer the research questions, while Pearson Product Moment Correlation Coefficient was used to test the null hypotheses at the 0.05 level of significance. The findings showed that e-library facilities were available and Utilized to a high extent (cluster mean = 2.80), computer laboratories were available and Utilized to a high extent (cluster mean = 2.82), and multimedia projectors were available and Utilized to a high extent (cluster mean = 2.84). The results further revealed significant positive relationships between e-library and academic performance ($r = .641$, $p < .05$), computer laboratories and academic performance ($r = .583$, $p < .05$), and multimedia projectors and academic performance ($r = .617$, $p < .05$). The study concludes that access to and Utilization of these selected e-learning facilities are significantly associated with students' academic performance. It recommends sustained provision, maintenance and purposeful integration of e-learning facilities into classroom instruction in public secondary schools.

INTRODUCTION

The rapid development of digital technologies has altered the contemporary educational environment and expanded the resources available for teaching and learning. Schools are increasingly expected to provide learners with opportunities to access, process and apply information through electronic resources. E-learning, in this context, encompasses the use of digital technologies and electronic instructional resources to support teaching, learning, communication, information access and independent study. The growing importance of technology-supported education became particularly evident during periods when conventional face-to-face instruction was disrupted, demonstrating the capacity of digital resources to sustain educational activities beyond the traditional classroom (Dhawan, 2020).

At the secondary school level, e-learning facilities may include electronic libraries, computer laboratories, multimedia projectors and other technology-supported instructional resources. An e-library can extend students' access to electronic books, journals, reference materials and other information resources. Such access may facilitate independent learning, research and the acquisition of information literacy skills. Computer laboratories provide opportunities for students to interact directly with computers and digital learning resources, thereby supporting practical activities, research and the development of digital competencies. Multimedia projectors, on the other hand, enable teachers to combine text, images, diagrams, video and animation in presenting instructional content.

Academic performance remains a central indicator of the extent to which educational objectives are being achieved. It reflects students' demonstrated learning through tests, examinations, assignments and other forms of academic assessment. Although academic performance is influenced by several interacting factors, including learner characteristics, teacher quality, instructional strategies and the school environment, the availability and appropriate Utilization of instructional resources constitute an important part of the learning environment.

The relevance of e-learning facilities to academic performance is not simply a question of whether schools possess technological equipment. The educational benefits of technology depend substantially on accessibility, functionality, teacher competence and the extent to which facilities are integrated into meaningful instructional activities. The availability of a computer laboratory, for example, may have limited educational value if the computers are not functional or students rarely have opportunities to use them. Similarly, multimedia projectors may contribute to learning when teachers employ them to present relevant and well-designed instructional materials rather than merely using them as substitutes for conventional presentation methods.

Empirical evidence provides support for the educational value of technology-supported resources. Akinnubi's study of computer Utilization and students' academic performance in secondary schools in Ilorin-West reported a significant relationship between computer Utilization and academic performance. Similarly, Ojelade and Aregbesola (2020) found that students taught Chemistry with multimedia projectors obtained significantly different achievement outcomes from those taught through the conventional method.

Despite the growing use of educational technologies, the availability and Utilization of e-learning facilities remain uneven across schools. Differences in infrastructure, electricity supply,

maintenance, digital competence and access to relevant resources may affect the extent to which technology contributes to learning. It is therefore necessary to examine the situation within specific educational contexts rather than assuming that the presence of technology produces uniform educational outcomes.

Against this background, the present study investigated the relationship between selected e-learning facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State. The study focused specifically on e-library facilities, computer laboratories and multimedia projectors.

Statement of the Problem

The effectiveness of secondary education depends partly on the availability of adequate instructional resources through which students can acquire, practise and apply knowledge. In a technology-oriented educational environment, students are expected to have reasonable access to electronic information resources, functional computers and multimedia instructional facilities. Such resources can supplement conventional textbooks and teacher-centred instruction by providing opportunities for independent learning, practical engagement and visual representation of difficult concepts.

However, the availability and Utilization of e-learning facilities in public secondary schools may not always correspond with the growing demand for technology-supported education. Some schools may have inadequate or outdated electronic resources, insufficient functional computers or limited access to multimedia equipment. In addition, the mere provision of facilities does not necessarily guarantee their regular Utilization for teaching and learning. Constraints relating to electricity, maintenance, internet connectivity, teacher competence and students' access may reduce the educational value of available technologies.

The concern is particularly important because students' academic performance continues to attract attention among educators, parents and educational administrators. Where students have inadequate access to relevant learning resources, their opportunities for independent study, practical learning, information retrieval and enhanced classroom engagement may be constrained. Conversely, meaningful access to appropriate e-learning facilities may provide additional opportunities for students to understand and apply academic content.

Although previous studies have examined the relationship between educational technology and students' achievement, evidence remains context-specific. Studies of computer Utilization and multimedia instruction, for instance, have reported positive associations or effects, but such findings cannot automatically be generalised to public secondary schools in Abia State. There is therefore a need for empirical evidence concerning the extent to which selected e-learning facilities are available and Utilized and how they relate to students' academic performance within the State.

It was this gap that motivated the present study. The study therefore examined the relationship between e-library facilities, computer laboratories, multimedia projectors and academic performance among Senior Secondary School students in public secondary schools in Abia State.

Purpose of the Study

The purpose of the study was to examine the relationship between selected e-learning facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State. Specifically, the study sought to:

1. Determine the extent of availability and Utilization of e-library facilities and their relationship with students' academic performance;
2. Determine the extent of availability and Utilization of computer laboratories and their relationship with students' academic performance; and
3. Determine the extent of availability and Utilization of multimedia projectors and their relationship with students' academic performance.

Research Questions

The following research questions guided the study:

1. To what extent are e-library facilities available and Utilized in public secondary schools in Abia State?
2. To what extent are computer laboratories available and Utilized in public secondary schools in Abia State?
3. To what extent are multimedia projectors available and utilized in public secondary schools in Abia State?

Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

H_{O1}: There is no significant relationship between e-library facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State.

H_{O2}: There is no significant relationship between computer laboratories and academic performance of Senior Secondary School students in public secondary schools in Abia State.

H_{O3}: There is no significant relationship between multimedia projectors and academic performance of Senior Secondary School students in public secondary schools in Abia State.

REVIEW OF RELATED LITERATURE

E-Library Facilities and Academic Performance

An e-library provides electronic access to information resources that can support formal and informal learning. Unlike the conventional library, which depends primarily on printed resources, an electronic library can provide access to digital books, journals, reference materials, databases and other online resources. For secondary school students, such resources may support assignment completion, research, independent study and the clarification of concepts introduced during classroom instruction.

The educational value of e-library facilities is closely related to accessibility and purposeful use. Students are more likely to benefit where electronic resources are current, relevant and readily accessible and where teachers guide learners towards appropriate academic resources. Dhawan (2020) emphasised the broader importance of online and digital learning resources in expanding educational opportunities, although the study also recognised the challenges associated with technology-supported learning.

The use of electronic learning resources may also provide an avenue for addressing limitations associated with inadequate conventional learning materials. However, the effectiveness of e-library facilities is likely to depend on infrastructure, digital literacy, the quality of available content and students' ability to locate and evaluate information.

Computer Laboratories and Academic Performance

Computer laboratories provide structured environments in which students can interact with computers and digital learning resources. They may be used for practical exercises, information retrieval, computer-based assessment, simulations and subject-specific learning activities. Regular and purposeful interaction with computers may also contribute to the development of digital competencies increasingly required in further education and employment.

Empirical evidence has reported relationships between computer Utilization and students' academic outcomes. Akinnubi et al.'s study of secondary school students in Ilorin-West adopted a correlational survey design and reported a significant relationship involving computer Utilization and students' academic performance. Such evidence suggests that the educational contribution of computer facilities may extend beyond the acquisition of computer skills to include support for academic learning.

Nevertheless, access alone is insufficient. Computers need to be functional, students need adequate opportunities to use them, and teachers need the competence to integrate computer-supported activities with curriculum objectives. Consequently, the relationship between computer laboratories and academic performance should be understood within the broader context of how the facilities are Utilized.

Multimedia Projectors and Academic Performance

Multimedia projectors enable teachers to present instructional materials through combinations of text, images, diagrams, video and animation. Such representations may be particularly useful when

teaching concepts that are difficult to communicate through verbal explanation alone. Multimedia-supported instruction can also provide visual stimulation and may encourage students' attention and engagement.

Mayer's (2021) multimedia learning perspective suggests that appropriately designed combinations of verbal and visual information can support learning by engaging complementary cognitive processing channels. The effectiveness of multimedia, however, depends on the quality and organisation of the material rather than on the technology itself.

Empirical evidence also provides support for the use of multimedia projectors in secondary education. Ojelade and Aregbesola (2020), in a quasi-experimental study involving 90 SS II Chemistry students, reported significantly higher post-test achievement among students exposed to multimedia projector instruction than those taught through the conventional method. The finding provides empirical support for examining multimedia projectors as a component of technology-supported instruction.

METHODOLOGY

Research Design

The study adopted a correlational research design. The design was appropriate because the study sought to determine the direction and strength of relationships between selected e-learning facilities and students' academic performance without manipulating the variables.

Population and Sample

The population of the study comprised 36,000 Senior Secondary School students and teachers in public secondary schools across Aba, Umuahia and Ohafia Education Zones of Abia State. A sample of 469 respondents was selected through a multistage sampling procedure. The sample comprised 224 respondents from Aba Education Zone, 122 from Umuahia Education Zone and 123 from Ohafia Education Zone.

Instrumentation

Data were collected using the researcher-developed E-Learning Facilities and Academic Performance Questionnaire (ELFAPQ). The questionnaire contained 24 items in the original study, with six items devoted to each of the four e-learning facilities. For the present journal article, analysis is restricted to the three variables specified in the study objectives: e-library, computer laboratories and multimedia projectors.

The instrument used a four-point response scale of Very High Extent (4), High Extent (3), Low Extent (2) and Very Low Extent (1). Academic performance was measured using students' academic records obtained from the selected schools.

The instrument was subjected to face and content validation by experts in relevant areas of education. Reliability was established using the test-retest method. The procedure was intended to establish the stability of the instrument before its administration in the main study.

Administration and Data Analysis

A total of 469 copies of the questionnaire were administered across the three Education Zones. Of these, 455 were properly completed and returned, representing a 97.0% return rate. The returned copies constituted the basis for the analysis.

Mean and standard deviation were used to answer the research questions. A criterion mean of 2.50 was adopted; mean scores of 2.50 and above were interpreted as high extent, while scores below 2.50 were interpreted as low extent. Pearson Product Moment Correlation Coefficient (PPMC) was used to test the three null hypotheses at the 0.05 level of significance.

DATA ANALYSIS AND RESULTS

Distribution and Return of Questionnaires

Table 1: Distribution and Return of Questionnaires by Education Zone

Education Zone	Administered	Returned	Not Returned	Percentage Returned
Aba	224	218	6	97.3
Umuahia	122	118	4	96.7
Ohafia	123	119	4	96.7
Total	469	455	14	97.0

Table 1 shows that 469 questionnaires were administered and 455 were properly completed and returned. Aba Education Zone recorded a return rate of 97.3%, while Umuahia and Ohafia recorded 96.7% each. The overall return rate of 97.0% provided 455 valid responses for analysis.

Research Question One

To what extent are e-library facilities available and utilized in public secondary schools in Abia State?

Table 2: Mean and Standard Deviation of Respondents' Ratings on E-Library Availability and Utilization (N = 455)

S/N	Item	Mean	SD	Decision
1.	E-library facilities are adequately available for students' academic activities.	2.82	0.93	High Extent
2.	Students have regular access to e-library resources for academic purposes.	2.76	0.94	High Extent
3.	The e-library contains current and relevant learning materials.	2.68	0.96	High Extent
4.	Students use e-library resources for assignments and research.	2.78	0.95	High Extent
5.	Teachers encourage students to use e-library resources during learning activities.	2.85	0.94	High Extent
6.	Access to e-library resources helps students understand their subjects better.	2.90	0.93	High Extent
	Cluster Mean	**2.80**	**0.94**	**High Extent**

Table 2 indicates that all six items recorded mean scores above the criterion mean of 2.50. The item means ranged from 2.68 to 2.90, while the cluster mean was 2.80. The result therefore indicates that e-library facilities were available and Utilized to a high extent. The relatively lowest mean was recorded for the currency and relevance of learning materials (2.68), while the highest was recorded for the perceived contribution of e-library access to students' understanding of their subjects (2.90).

Research Question Two

To what extent are computer laboratories available and Utilized in public secondary schools in Abia State?

Table 3: Mean and Standard Deviation of Respondents' Ratings on Computer Laboratory Availability and Utilization (N = 455)

S/N	Item	Mean	SD	Decision
7.	Computer laboratory facilities are available in my school.	2.85	0.94	High Extent
8.	The computers in the laboratory are functional and adequate for students' use.	2.73	0.95	High Extent
9.	Students have regular access to the computer laboratory.	2.76	0.95	High Extent
10.	Computer laboratory sessions enhance students' learning experiences.	2.87	0.94	High Extent
11.	Teachers effectively use the computer laboratory during instruction.	2.80	0.95	High Extent
12.	The use of computer laboratories contributes to better academic performance.	2.91	0.93	High Extent
	Cluster Mean	**2.82**	**0.94**	**High Extent**

Table 3 shows that all six items recorded mean scores above 2.50. The item means ranged from 2.73 to 2.91, with a cluster mean of 2.82. Thus, computer laboratories were available and Utilized to a high extent. The lowest mean concerned the functionality and adequacy of computers (2.73), suggesting that this aspect may require greater attention than the other indicators.

Research Question Three

To what extent are multimedia projectors available and Utilized in public secondary schools in Abia State?

Table 4: Mean and Standard Deviation of Respondents' Ratings on Multimedia Projector Availability and Utilization (N = 455)

S/N	Item	Mean	SD	Decision
13.	Multimedia projectors are available in my school.	2.65	0.97	High Extent
14.	Teachers frequently use multimedia projectors during lessons.	2.60	0.97	High Extent
15.	The use of multimedia projectors makes lessons more interesting.	2.97	0.92	High Extent
16.	Multimedia presentations improve students' understanding of difficult topics.	2.96	0.91	High Extent
17.	Students are more attentive during lessons involving multimedia projectors.	2.90	0.93	High Extent
18.	The use of multimedia projectors enhances academic performance.	2.93	0.91	High Extent
	Cluster Mean	**2.84**	**0.94**	**High Extent**

Table 4 indicates that all six items recorded mean scores above the criterion mean of 2.50. The item means ranged from 2.60 to 2.97, while the cluster mean was 2.84. The result indicates that multimedia projectors were available and Utilized to a high extent. Although availability (2.65) and teachers' frequency of use (2.60) recorded the relatively lower means, respondents rated the contribution of multimedia projectors to lesson interest, understanding and academic performance more highly

Test of Hypothesis One

H_{O1}: There is no significant relationship between e-library facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State.

Table 5: Pearson Product Moment Correlation between E-Library Facilities and Academic Performance

Variables	N	Pearson r	Sig. (2-tailed)	Decision
E-library facilities	455	.641	.000	Reject H_{O1}
Academic performance	455			

Table 5 shows a positive correlation coefficient of .641 between e-library facilities and students' academic performance. The probability value of .000 is less than the 0.05 level of significance. The null hypothesis is therefore rejected. The result indicates a statistically significant positive relationship between e-library facilities and academic performance.

Test of Hypothesis Two

H_{O2}: There is no significant relationship between computer laboratories and academic performance of Senior Secondary School students in public secondary schools in Abia State.

Table 6: Pearson Product Moment Correlation between Computer Laboratories and Academic Performance

Variables	N	Pearson r	Sig. (2-tailed)	Decision
Computer laboratories	455	.583	.000	Reject H_{O2}
Academic performance	455			

Table 6 shows a positive correlation coefficient of .583 between computer laboratories and academic performance. Since the probability value of .000 is below 0.05, the null hypothesis is rejected. The result establishes a statistically significant positive relationship between computer laboratories and students' academic performance.

Test of Hypothesis Three

H_{O3}: There is no significant relationship between multimedia projectors and academic performance of Senior Secondary School students in public secondary schools in Abia State.

Table 7: Pearson Product Moment Correlation between Multimedia Projectors and Academic Performance

Variables	N	Pearson r	Sig. (2-tailed)	Decision
Multimedia projectors	455	.617	.000	Reject H_{O3}
Academic performance	455			

Table 7 indicates a positive correlation coefficient of .617 between multimedia projectors and academic performance. The probability value of .000 is less than the 0.05 level of significance. The null hypothesis is therefore rejected. The result indicates a statistically significant positive relationship between multimedia projectors and students' academic performance.

Summary of the Findings

The study yielded three major findings. First, e-library facilities were available and Utilized to a high extent, with a cluster mean of 2.80, and there was a significant positive relationship between e-library facilities and academic performance ($r = .641$, $p < .05$).

Second, computer laboratories were available and Utilized to a high extent, with a cluster mean of 2.82. The analysis further revealed a significant positive relationship between computer laboratories and students' academic performance ($r = .583$, $p < .05$).

Third, multimedia projectors were available and Utilized to a high extent, with a cluster mean of 2.84, and there was a significant positive relationship between multimedia projectors and students' academic performance ($r = .617$, $p < .05$).

Discussion of Findings

The finding that e-library facilities were available and Utilized to a high extent is indicative of the growing relevance of electronic information resources within secondary school learning environments. The availability of e-library resources provides students with opportunities to obtain information beyond the materials immediately available in conventional classrooms and libraries. The result is consistent with the broader literature on digital learning, which recognizes electronic resources as mechanisms for expanding access to educational information and supporting independent learning (Dhawan, 2020).

More importantly, the study established a significant positive relationship between e-library facilities and academic performance (r = .641). This suggests that schools in which students have greater access to and Utilization of e-library facilities tend also to record higher levels of academic performance. The finding is educationally plausible because electronic resources can facilitate additional reading, research and clarification of difficult concepts. However, because the present study employed a correlational design, the finding should be interpreted as an association rather than evidence that e-library facilities independently caused the observed academic performance.

The finding concerning computer laboratories showed that these facilities were available and Utilized to a high extent, with a cluster mean of 2.82. The result indicates that computer laboratories had become a meaningful component of the learning environment in the schools studied. Nevertheless, the relatively lower mean for the functionality and adequacy of computers suggests that provision and functionality are not necessarily equivalent. Sustained educational use requires that equipment remain operational and that students receive adequate opportunities to use the facilities.

The significant positive relationship between computer laboratories and academic performance (r = .583) further indicates that greater availability and Utilization of computer laboratories were associated with higher academic performance. This finding is consistent with the study of Akinnubi et al., which reported a significant relationship between computer Utilization and academic performance among secondary school students. The finding may be explained by the opportunities computer laboratories provide for practical learning, digital research, computer-based exercises and access to additional instructional resources. Again, the correlational nature of the study means that other factors associated with both technology use and academic performance may also contribute to the observed relationship.

The third finding showed that multimedia projectors were available and Utilized to a high extent, with a cluster mean of 2.84. The relatively high ratings for making lessons more interesting, improving understanding of difficult topics and enhancing students' attention indicate that respondents perceived multimedia presentation as a useful instructional resource.

The significant positive relationship between multimedia projectors and academic performance (r = .617) is consistent with the findings of Ojelade and Aregbesola (2020), who reported significantly higher achievement among students taught Chemistry with multimedia projectors than those taught using conventional instruction. The present finding may be associated with the ability of multimedia presentations to provide visual representations of concepts that may otherwise be difficult to communicate through verbal instruction alone. Nevertheless, the

effectiveness of multimedia instruction depends on the quality of the instructional content and the teacher's ability to integrate the technology appropriately into the lesson.

Taken together, the findings provide evidence of significant positive relationships between each of the three selected e-learning facilities and students' academic performance. The results reinforce the view that technology-supported resources can form an important part of the contemporary secondary school learning environment. At the same time, the findings should not be interpreted as establishing a simple causal relationship between the presence of technology and academic achievement.

Conclusion

The study examined the relationship between selected e-learning facilities and academic performance of Senior Secondary School students in public secondary schools in Abia State. Based on the findings, e-library facilities, computer laboratories and multimedia projectors were available and Utilized to a high extent.

The study further established statistically significant positive relationships between each of the three facilities and students' academic performance. The findings therefore indicate that technology-supported learning resources are relevant components of the secondary school learning environment. Their potential educational contribution, however, is dependent on meaningful access, functionality and purposeful integration into teaching and learning.

Since the study adopted a correlational design, the findings establish associations rather than definitive causal effects. Consequently, the results should be understood as evidence of relationships within the population and context studied rather than as proof that the facilities alone determine students' academic performance.

Recommendations

Based on the findings, the following recommendations are made:

1. E-library facilities: The relevant education authorities and school administrators should strengthen the provision and maintenance of e-library facilities and ensure that students have regular access to current and curriculum-relevant electronic learning materials.

2. Computer laboratories: Public secondary schools should ensure that computer laboratories contain functional and adequate computers and that students are provided with regular opportunities to use them for curriculum-related activities, research and practical learning.

3. Multimedia projectors: School authorities should provide functional multimedia projectors and strengthen teachers' capacity to integrate appropriate multimedia resources into classroom instruction, particularly when presenting abstract, complex or visually demanding concepts.

References

Akinnubi, O. O. (2021). Computer utilization and students' academic performance in secondary schools in Ilorin-West Local Government Area, Kwara State: Management implications. Al-Hikmah Journal of Education, 8(2).

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. Journal of Educational Technology Systems, 49(1), 5–22. https://doi.org/10.1177/0047239520934018

Federal Ministry of Education. (2020). National policy on education. NERDC Press.

Ifeanyi, O., & Chinedu, M. (2022). E-learning integration and academic performance: Evidence from Nigerian secondary schools. Journal of Digital Learning, 10(3), 101–118.

Ifijeh, G., & Yusuf, M. O. (2020). Understanding digital learning tools in Nigerian secondary schools: Opportunities and challenges. Journal of Educational Technology, 12(2), 215–230.

Mayer, R. E. (2021). Multimedia learning. Cambridge University Press.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2014). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. U.S. Department of Education.

Ojelade, I. A., & Aregbesola, B. G. (2020). Effects of multimedia projectors as instructional media on secondary school students' academic performance in chemistry. The Environmental Studies Journal, 3(2), 22–37.

Ogunleye, T. (2020). Academic performance of secondary school students in Nigeria: A review. Nigerian Educational Review, 19(1), 34–52.

Okonkwo, C. (2021). Adoption of ICT in secondary schools in Abia State: Issues and prospects. International Journal of Educational Development, 17(1), 31–49.

UNESCO. (2021). E-learning and digital education strategies. UNESCO Publishing.

UNICEF Nigeria. (2021). Digital learning and the COVID-19 response in Nigeria: Challenges and opportunities. UNICEF Nigeria.