



Challenges and Influence of Distance Learning on Students' Academic Performance in Secondary Schools in Rivers state, Nigeria

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Abstract

This study examined the challenges and influence of distance learning on students' academic performance in secondary schools in Rivers State, Nigeria. The study was guided by three research questions and three hypotheses. A descriptive survey research design was adopted for the study. The population of the study consisted of 5,200 Senior Secondary School II (SS II) students in public secondary schools in Rivers State, while a sample size of 520 students was selected using a multistage sampling technique. Data were collected using a structured questionnaire titled "Challenges and Influence of Distance Learning on Students' Academic Performance Questionnaire (CIDLSAPQ)". The instrument was validated by experts in educational measurement and evaluation, and its reliability was established using the test-retest method. Data collected were analyzed using mean and standard deviation to answer the research questions, while the chi-square statistical tool was used to test the hypotheses at the 0.05 level of significance. The findings revealed that distance learning has a significant influence on students' academic performance in secondary schools in Rivers State. It was also found that several challenges such as poor internet connectivity, high cost of data, irregular electricity supply, lack of digital devices, and inadequate technological skills affect the effective implementation of distance learning. Furthermore, the study revealed a significant relationship between the availability of technological facilities and students' academic performance. Based on the findings, it was concluded that while distance learning can enhance students' academic performance, its effectiveness is largely dependent on the availability of adequate technological infrastructure and support systems. The study recommended the improved provision of ICT facilities, training of teachers and students on digital skills, and subsidization of internet and learning devices to enhance effective distance learning in secondary schools.

Keywords: Distance Learning, Academic Performance, Secondary Schools, Technological Facilities, Challenges, Rivers State Nigeria

Introduction

Most people agree that education is a crucial tool for both individual and national development. It significantly contributes to the development of the values, competencies, knowledge, and skills required for social and economic advancement. Technology has changed many facets of life in recent years, including education. Distance learning is one of the main developments that have been included into the educational system. The term "distance learning" describes an educational approach that uses a variety of technical and communication instruments, including computers, cell phones, television, radio, and internet capabilities, to conduct instruction and learning when instructors and students are separated by time, distance, or both. Students can access educational materials outside of the conventional classroom setting through distance learning (Metz & Bezuidenhout, 2018).

Due to its flexibility, accessibility, and capacity to offer learning opportunities to a large number of students regardless of geographic constraints, distance learning has become more and more popular worldwide. The global adoption of distance learning was further driven by the COVID-19 epidemic. In order to maintain educational continuity, several schools were forced to close their physical classrooms and switch to online and remote learning. Due to the availability of sufficient technology infrastructure, internet access, electrical supply, and digital literacy among educators and learners, the shift to distant learning was more effective in industrialized nations. However, there have been many difficulties in implementing distant learning in underdeveloped nations like Nigeria (Towobola & Raimi, 2011).

The COVID-19 pandemic caused major disruptions to Nigeria's educational system, which prompted several schools to implement distance learning strategies. Through online platforms, radio classes, television broadcasts, WhatsApp groups, and other digital learning techniques, secondary schools in a number of states, including Rivers State, made an effort to maintain academic activities. Many students faced challenges that impacted their academic performance and learning outcomes in spite of these efforts. Effective distance learning was severely hampered by problems like poor internet connectivity, limited access to digital devices, unstable electricity supplies, expensive data subscriptions, low technological proficiency, and ineffective teacher-student interaction (Adeoye et al, 2022).

The degree of success gained by students in their educational endeavors is referred to as academic performance, and it is typically assessed through exams, tests, assignments, and classroom engagement. While subpar learning settings may have a detrimental effect on students' attainment, effective learning environments have a favorable impact on students' academic performance. Students' academic performance is impacted by distance learning in both positive and bad ways. On the one hand, it encourages self-directed learning, adaptability, digital literacy, and access to a variety of educational resources. When needed, students can review recorded lessons and learn at their own pace. However, remote learning may impair students' focus, motivation, self-control, and social connection with classmates and teachers, which could have an impact on their comprehension of the material and overall academic performance (Adewale, 2022).

Teachers, parents, and students in Rivers State, Nigeria, have differing opinions about the use of distant learning in secondary schools. While some students found the flexibility and convenience of online learning to be beneficial, others were frustrated by inadequate learning resources and unfavorable home learning environments. The smartphones, laptops, and internet services needed to effectively participate in remote learning were out of reach for many low-income and rural families. Additionally, the effectiveness of lesson delivery was diminished since some teachers had sufficient training and expertise in the use of digital teaching methods (Adio, 2022).

Rivers State's educational stakeholders are increasingly concerned about how distant learning affects students' academic achievement. While some studies have shown that distant learning improves students' digital skills and self-learning capacities, others have shown that distractions, inadequate supervision, low motivation, and insufficient technology support have all contributed to a drop in students' academic achievement. Variations in secondary school students' learning results are also influenced by disparities in their socioeconomic background, school location, and availability to educational resources (Akinyemi, et al., 2023).

Additionally, the difficulties of remote learning could increase educational disparities between pupils in rural and urban locations. When compared to students in rural regions, students in metropolitan areas frequently have better access to digital gadgets, energy, and internet connectivity. As a result, students from underprivileged backgrounds might find it difficult to handle online learning activities, which could result in subpar academic performance and a diminished motivation in learning (Alenezi, 2024). Due to these difficulties, it is essential to look at how remote learning affects students' academic performance and pinpoint the main obstacles limiting its efficacy in secondary education.

Thus, the purpose of this study is to look into the difficulties and effects of distance learning on secondary school pupils' academic performance in Rivers State, Nigeria. The study will assist in determining the key elements influencing successful distance learning and offer helpful suggestions for raising the standard of remote instruction in secondary schools. The study's conclusions may also help government organizations, educators, parents, school administrators, and educational policymakers create plans to improve kids' academic achievement through the successful execution of distant learning initiatives.

Statement of the Problem

Many educational institutions worldwide have adopted distance learning as a result of technological advancements and the growing demand for flexible learning. In order to maintain educational continuity, secondary schools in Nigeria implemented a variety of remote learning strategies, including online courses, virtual lessons, radio and television broadcasts, and the usage of mobile learning platforms, especially during and after the COVID-19 pandemic. Even though distant learning has many advantages, there are a number of issues with its adoption in many secondary schools that could have an impact on students' academic performance (Apata, et al., 2025).

Due to limited access to digital devices, poor internet connectivity, erratic electrical supply, and expensive data subscriptions, many secondary school students in Rivers State find it difficult to participate in distant learning programs. Additionally, many professors lack the necessary training in digital teaching techniques, and some students lack the technological know-how needed to use online learning systems. Students' engagement, comprehension, motivation, and academic success may all decline as a result of these difficulties.

Additionally, by decreasing in-person interactions between instructors and students, remote learning has altered the conventional approach to teaching and learning. Students' focus, self-control, and capacity to get prompt clarification during class may all be impacted by this circumstance. Due to environmental variables, a lack of supervision, or bad study habits, some students may become distracted at home, which can have a detrimental effect on their academic performance (David et al., 2022). Additionally, pupils may have different learning chances due to variances in socioeconomic background and school location, particularly between urban and rural schools.

There is still little empirical data on the particular difficulties and impact of distance learning on students' academic performance in secondary schools in Rivers State, despite the fact that numerous research have looked at it in various parts of Nigeria. Therefore, it is imperative to look into how much distance learning impacts students' academic performance and pinpoint the main obstacles to its success in the state's secondary schools (Ezekiel & Akinyemi, 2022). Examining the difficulties and effects of distance learning on students' academic performance in secondary schools in Rivers State, Nigeria, is the problem of this study.

Aim of the Study

The aim of this study is to examine the challenges and influence of distance learning on students' academic performance in secondary schools in Rivers State, Nigeria. The objectives of the study are to:

1. Examine the influence of distance learning on students' academic performance in secondary schools in Rivers State.
2. Identify the challenges affecting the effective use of distance learning among secondary school students in Rivers State.
3. Determine the relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State.

Research Questions

The following research questions will guide the study:

1. What is the influence of distance learning on students' academic performance in secondary schools in Rivers State?
2. What are the challenges affecting the effective use of distance learning among secondary school students in Rivers State?
3. What is the relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State?

Research Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

1. There is no significant influence of distance learning on students' academic performance in secondary schools in Rivers State.
2. There are no significant challenges affecting the effective use of distance learning among secondary school students in Rivers State.
3. There is no significant relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State.

Methodology

This study adopted a descriptive survey research design. The study was carried out in Rivers State, Nigeria. The population of the study consisted of all senior secondary school students in public secondary schools in Rivers State. The population comprised 5,200 Senior Secondary School II (SS II) students selected from public secondary schools in the state. A sample size of 520 students was selected for the study. Multi-stage sampling technique was used. First, simple random sampling was used to select ten public secondary schools from different local government areas in Rivers State. Secondly, a stratified sampling technique was used to group students according to gender and school location. Finally, simple random sampling technique was used to select the respondents from each school.

The instrument for data collection was a structured questionnaire titled "Challenges and Influence of Distance Learning on Students' Academic Performance Questionnaire (CIDLSAPQ)." The questionnaire consisted of two sections. Section A contained demographic information of the respondents, while Section B contained items related to the objectives of the study. The

questionnaire items were structured on a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The instrument was subjected to face and content validity by expert in Educational Technology, Measurement, and Evaluation. The reliability of the instrument was determined using the test-retest method. A reliability coefficient of 0.82 was obtained for the study. Data collected for the study were analyzed using mean and standard deviation to answer the research questions. The null hypotheses were tested using the chi-square statistical tool at 0.05 level of significance.

Results

Research Question 1: What is the influence of distance learning on students' academic performance in secondary schools in Rivers State?

Table 4.1: Mean Responses on the Influence of Distance Learning on Students' Academic Performance

S/N	Items	Mean	SD	Decision
1	Distance learning improves students' digital learning skills	3.42	0.71	Agree
2	Distance learning enables students to study at their own pace	3.31	0.76	Agree
3	Distance learning increases students' access to learning materials	3.28	0.81	Agree
4	Poor interaction during distance learning affects students' understanding	3.40	0.73	Agree
5	Distance learning influences students' academic performance positively	3.22	0.85	Agree
	Grand Mean	3.33	0.77	Agree

The result in Table 4.1 shows that all the items had mean scores above the criterion mean of 2.50. The grand mean of 3.33 indicates that distance learning has a significant influence on students' academic performance in secondary schools in Rivers State. The respondents agreed that distance learning improves digital skills, promotes flexible learning, and increases access to learning materials.

Research Question 2: What are the challenges affecting the effective use of distance learning among secondary school students in Rivers State?

Table 4.2: Mean Responses on the Challenges Affecting Distance Learning

S/N	Items	Mean	SD	Decision
1	Poor internet connectivity affects distance learning	3.61	0.62	Agree
2	High cost of data subscription limits participation in online learning	3.54	0.68	Agree
3	Irregular electricity supply affects effective distance learning	3.70	0.55	Agree
4	Lack of digital devices limits students' participation	3.48	0.74	Agree
5	Lack of technological skills affects students' learning	3.36	0.79	Agree
	Grand Mean	3.54	0.68	Agree

Table 4.2 reveals that all the identified items recorded mean scores above 2.50. The grand mean score of 3.54 shows that respondents agreed that poor internet access, high cost of data, irregular power supply, inadequate digital devices, and poor technological skills are major challenges affecting distance learning in secondary schools in Rivers State.

Research Question 3: What is the relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State?

Table 4.3: Mean Responses on Availability of Technological Facilities and Academic Performance

S/N	Items	Mean	SD	Decision
1	Availability of smartphones enhances participation in distance learning	3.44	0.72	Agree
2	Access to internet facilities improves students' academic performance	3.52	0.65	Agree
3	Availability of computers supports effective online learning	3.38	0.70	Agree
4	Technological facilities improve students' understanding of lessons	3.29	0.80	Agree
5	Students with adequate technological facilities perform better academically	3.47	0.67	Agree
	Grand Mean	3.42	0.71	Agree

The result in Table 4.3 indicates that all items recorded mean scores above the criterion mean of 2.50. The grand mean of 3.42 shows that there is a positive relationship between availability of technological facilities and students' academic performance in distance learning.

Test of Hypotheses

The hypotheses were tested using chi-square statistical analysis at 0.05 level of significance.

Hypothesis One: There is no significant influence of distance learning on students' academic performance in secondary schools in Rivers State.

Table 4.4: Chi-square Analysis on the Influence of Distance Learning on Academic Performance

Variables	N	Df	χ^2 -cal	χ^2 -crit	Decision
Distance learning and academic performance	520	4	15.62	9.49	Rejected

Since the calculated chi-square value of 15.62 is greater than the critical value of 9.49 at 0.05 level of significance and 4 degrees of freedom, the null hypothesis is rejected. Therefore, there is a significant influence of distance learning on students' academic performance in secondary schools in Rivers State.

Hypothesis Two: There are no significant challenges affecting the effective use of distance learning among secondary school students in Rivers State.

Table 4.5: Chi-square Analysis on Challenges Affecting Distance Learning

Variables	N	Df	χ^2 -cal	χ^2 -crit	Decision
Challenges affecting distance learning	520	4	18.44	9.49	Rejected

Since the calculated chi-square value of 18.44 is greater than the critical value of 9.49 at 0.05 level of significance and 4 degrees of freedom, the null hypothesis is rejected. Therefore, there are significant challenges affecting the effective use of distance learning among secondary school students in Rivers State.

Hypothesis Three: There is no significant relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State.

Table 4.6: Chi-square Analysis on Technological Facilities and Academic Performance

Variables	N	Df	χ^2 -cal	χ^2 -crit	Decision
Technological facilities and academic performance	520	4	16.87	9.49	Rejected

Since the calculated chi-square value of 16.87 is greater than the critical value of 9.49 at 0.05 level of significance and 4 degrees of freedom, the null hypothesis is rejected. Therefore, there is a

significant relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State.

Discussion of Findings

Research Question 1: What is the influence of distance learning on students' academic performance in secondary schools in Rivers State?

There is still little empirical data on the particular difficulties and impact of distance learning on students' academic performance in secondary schools in Rivers State, despite the fact that numerous research have looked at it in various parts of Nigeria. Therefore, it is imperative to look into how much distance learning impacts students' academic performance and pinpoint the main obstacles to its success in the state's secondary schools (Ezekiel & Akinyemi, 2022). Examining the difficulties and effects of distance learning on students' academic performance in secondary schools in Rivers State, Nigeria, is the problem of this study.

This result could be explained by the accessibility and adaptability of remote learning. Students can enhance their comprehension of academic subjects by accessing recorded classes, digital learning resources, and virtual classroom activities via online learning platforms. Nnenna & Perpetua (2024) assert that distant learning fosters autonomous learning and motivates students to assume more accountability for their academic advancement. In a similar vein, Azorín (2020) pointed out that students can enhance their digital literacy and educational experiences through online learning.

The results are also in line with Dhawan's (2020) study, which found that because online learning allowed for continuity of education even in the face of school closures, it emerged as a significant educational alternative during the COVID-19 epidemic. However, the results also showed that students' comprehension of classes may be adversely affected by inadequate teacher-student contact during online learning. This supports the argument made by Jacob et al. (2020) that the efficacy of remote learning, particularly for secondary school students, may be diminished by a lack of in-person interaction and quick feedback.

Research Question 2: What are the challenges affecting the effective use of distance learning among secondary school students in Rivers State?

The results of the second study question showed that a number of obstacles prevent Rivers State secondary school students from using remote learning effectively. Poor internet connectivity, expensive data subscriptions, erratic power supplies, a shortage of digital gadgets, and students' lack of technological proficiency are the main issues noted.

This conclusion can be related to the economic and infrastructure issues that Nigeria's educational system is facing. Many students lack the smartphones, laptops, and reliable internet connections needed for successful online learning, particularly those from low-income and rural backgrounds. Oni et al. (2023) stated that among the main issues influencing distance learning in Nigeria during the COVID-19 epidemic were limited technology facilities and poor internet access. Similarly, Mashau and Nyawo (2021) found that students' involvement in online learning activities was greatly diminished by inconsistent electrical supply and expensive internet.

The results also support the findings of Mashilo & Selelo's (2021) study, which found that the implementation of distant learning programs is adversely affected by teachers' and students' lack of technological proficiency. Students may find it challenging to obtain course materials, turn in assignments, and take part in online class discussions if they are unfamiliar with online learning

platforms. As a result, these difficulties impede efficient teaching and learning and may have a detrimental effect on students' academic achievement.

Additionally, the results corroborate Michael's (2020) explanation that the introduction of emergency remote instruction during the pandemic revealed disparities in students' access to educational technology. This suggests that in distant learning settings, students who lack sufficient digital tools are likely to experience more academic challenges.

Research Question 3: What is the relationship between availability of technological facilities and students' academic performance in distance learning in secondary schools in Rivers State?

The finding of research question three revealed that there is a positive relationship between the availability of technological facilities and students' academic performance in distance learning. The respondents agreed that access to smartphones, computers, and internet facilities enhances students' participation, understanding, and academic achievement in online learning environments.

This finding suggests that technological facilities play an important role in supporting effective distance learning. Students are more likely to actively participate in online classes, do homework, and interact with teachers and peers when they have access to digital devices and dependable internet services. Toquero (2020b) asserts that students' engagement and learning outcomes in distant education programs are enhanced when they have access to technology. Similarly, educational technology improves students' academic performance by facilitating better access to learning resources and promoting active engagement in learning activities, according to Rashid & Yadav (2020).

The results also support the findings of Toquero's (2021) study, which discovered that pupils who have access to sufficient technology for learning frequently outperform those who do not. Furthermore, the results suggest that the difference between students in urban and rural areas may increase due to a lack of technology facilities. There are disparities in learning opportunities because children in urban schools are more likely than those in rural regions to have access to digital devices and the internet. In order to improve the efficacy of distant learning and raise students' academic achievement in secondary schools in Rivers State, sufficient technology facilities must be available.

Conclusion

The results of this study indicate that students' academic performance in secondary schools in Rivers State, Nigeria, is significantly impacted by distant learning. According to the study, when used properly, distant learning offers chances for flexible learning, enhanced digital literacy, and more access to educational resources, all of which can improve students' academic performance. However, the study also found that a number of obstacles prevent remote learning from being used successfully. Poor internet connectivity, expensive data subscriptions, erratic electrical supplies, limited access to digital gadgets, and students' lack of technological proficiency are some of these issues. These elements may have a detrimental impact on students' academic achievement and severely restrict their ability to participate in distance learning activities.

Additionally, the study found that students' effectiveness in distant learning is significantly influenced by the availability of technology facilities. Academic performance is typically higher for students who have access to computers, smartphones, and dependable internet services than for those who have not. This indicates that students' academic achievement in distant learning is significantly correlated with technology resources. Although distant learning generally has the

potential to enhance secondary school education delivery and student learning results, its efficacy in Rivers State is mostly based on the availability of sufficient infrastructure and support mechanisms. As a result, resolving the issues rose will boost distance learning's effectiveness and raise students' academic achievement in the state's secondary schools.

Recommendations

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

1. The government and educational stakeholders should improve the provision of digital infrastructure in secondary schools by ensuring stable electricity supply, affordable internet services, and access to functional ICT facilities.
2. School administrators and the Ministry of Education should organize regular training and workshops for teachers and students on the use of digital learning platforms.
3. The government and private sector partners should support students, especially those from low-income backgrounds, by providing subsidized data plans, smartphones, and laptops.

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