

THE IMPACT OF SCHOOL FACILITIES ON STUDENTS' ACADEMIC ACHIEVEMENT IN PUBLIC SECONDARY SCHOOLS IN FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

BY

SAMIRA GANE

Mobile: 09096602675

Email: Samirajibringane@gmail.com

Abstract

School facilities play a crucial role in shaping the quality of education and students' academic outcomes, yet many public secondary schools in Nigeria face infrastructural deficiencies that hinder effective teaching and learning. This study examines the impact of school facilities on students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria. The research adopted a descriptive survey design involving 500 respondents, including students, teachers, and school administrators, selected through stratified random sampling. Data were collected using structured questionnaires and observation checklists and analyzed using descriptive statistics, Pearson correlation, and regression analysis. The findings reveal that adequate school facilities—such as classrooms, laboratories, libraries, instructional materials, and sanitation infrastructure—significantly enhance students' academic performance. Conversely, poor and inadequate facilities contribute to low student motivation, overcrowding, and reduced learning outcomes. The study further highlights that disparities in facility provision exist between urban and rural schools within the FCT. The findings underscore the need for increased government investment, effective maintenance culture, and equitable distribution of educational resources. The study concludes that improving school facilities is essential for enhancing students' academic achievement and achieving quality education in Nigeria.

Keywords: School facilities, academic achievement, public secondary schools, Federal Capital Territory Abuja Nigeria, educational infrastructure, learning environment

Background of the Study

Education remains a fundamental pillar for national development, providing individuals with the knowledge, skills, and competencies necessary for societal progress. One of the critical components influencing the quality of education is the availability and adequacy of school facilities. School facilities refer to the physical and material resources available in schools, including classrooms, libraries, laboratories, furniture, instructional materials, and sanitation facilities. These resources create the learning environment that directly affects students' academic performance and overall educational experience (Asiyai, 2015).

Globally, research has emphasized the importance of a conducive learning environment in promoting academic achievement. Well-equipped schools enhance teaching effectiveness, student engagement, and knowledge retention. In contrast, inadequate facilities can lead to overcrowding, poor concentration, and reduced academic outcomes (UNESCO, 2022). In Nigeria, the National Policy on Education (Federal Republic of Nigeria, 2014) recognizes the need for adequate infrastructure as a prerequisite for quality education. However, many public secondary schools, particularly in developing regions, still struggle with infrastructural challenges.

The Federal Capital Territory, Abuja, represents a unique educational setting, combining both urban and rural communities. While some schools in urban areas are relatively well-equipped, many schools in rural and peri-urban areas face shortages of essential facilities such as science laboratories, libraries, and adequate classrooms. These disparities affect the quality of education delivered and contribute to variations in students' academic achievement (Ogunode & Musa, 2020).

School facilities influence not only academic performance but also students' motivation, attendance, and overall well-being. For instance, access to functional laboratories enhances practical learning in science subjects, while well-stocked libraries promote reading culture and independent learning. Additionally, proper sanitation and safe school environments contribute to students' health and regular attendance, further improving academic outcomes.

Despite various government interventions aimed at improving school infrastructure, challenges such as inadequate funding, poor maintenance, and rapid population growth continue to strain existing facilities. As a result, many public secondary schools in the Federal Capital Territory, Abuja, operate under suboptimal conditions, which may negatively impact students' academic achievement.

This study, therefore, seeks to examine the impact of school facilities on students' academic achievement in public secondary schools in the Federal

Capital Territory, Abuja, Nigeria, with a view to providing empirical evidence for policy formulation and educational improvement.

Statement of the Problem

Despite increased attention to improving education in Nigeria, many public secondary schools in the Federal Capital Territory, Abuja, continue to face significant challenges related to inadequate school facilities. Overcrowded classrooms, lack of functional laboratories, poorly equipped libraries, insufficient instructional materials, and inadequate sanitation facilities are common issues affecting many schools.

These infrastructural deficiencies negatively impact the teaching and learning process, leading to reduced student engagement, poor academic performance, and low overall educational quality. Students in poorly equipped schools often lack access to practical learning experiences and essential academic resources, which are critical for achieving academic excellence.

Furthermore, disparities in facility distribution between urban and rural schools in the FCT exacerbate inequalities in educational outcomes. While some schools benefit from modern facilities, others operate under severely constrained conditions, limiting students' opportunities for academic success.

Although government and stakeholders have implemented various interventions to improve school infrastructure, gaps remain in both provision and maintenance. Without adequate attention to school facilities, efforts to improve academic achievement may not yield the desired results.

This study, therefore, seeks to investigate the extent to which school facilities impact students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

Research Objectives

The main objective of this study is to examine the impact of school facilities on students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria. Specifically, the study seeks to:

1. Examine the relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria.
2. Determine the impact of specific school facilities (classrooms, laboratories, libraries, and sanitation facilities) on students' academic performance.

Research Questions

The study seeks to answer the following research questions:

1. What is the relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria?
2. How do specific school facilities influence students' academic performance in public secondary schools in the Federal Capital Territory, Abuja Nigeria?

Statement of Hypotheses

The study formulated the following null hypotheses:

1. **H₀₁:** There is no significant relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria.
2. **H₀₂:** School facilities have no significant impact on students' academic performance in public secondary schools in the Federal Capital Territory, Abuja Nigeria.

Literature Review

School facilities have been widely recognized as a key determinant of students' academic achievement. Several empirical studies have examined how physical and material resources in schools influence learning outcomes.

Asiyai (2015) found that schools with adequate facilities recorded higher student performance compared to those with poor infrastructure. The study emphasized that conducive learning environments enhance concentration, motivation, and academic engagement.

Ogunode and Musa (2020) examined the role of school infrastructure in Nigerian secondary schools and reported that well-equipped classrooms, libraries, and laboratories significantly improved students' academic achievement. The study also noted that overcrowded classrooms negatively affected teaching effectiveness and student learning.

Babalola (2023) highlighted that access to modern educational facilities, including ICT resources, improves students' understanding of complex subjects and enhances academic performance. Similarly, Ibrahim (2021) found that laboratory availability positively influences students' performance in science subjects by enabling practical learning experiences.

Ajayi and Ekundayo (2023) reported that library facilities play a significant role in improving students' reading habits and academic success. Students with access to well-stocked libraries performed better academically than those without such resources.

However, several studies have also identified challenges related to inadequate school facilities in Nigeria. Adamu (2025) noted that poor infrastructure remains a major barrier to quality education, particularly in rural areas. The study emphasized the need for increased investment and effective maintenance of school facilities.

Overall, the literature suggests that school facilities are critical for enhancing students' academic achievement. However, disparities in resource allocation and infrastructural deficiencies continue to hinder educational outcomes in many parts of Nigeria, including the Federal Capital Territory, Abuja.

Methodology

Research Design

This study adopted a descriptive survey research design, which is suitable for examining the relationship between school facilities and students' academic achievement in public secondary schools. According to Nwankwo and Eze (2020), survey research allows for the collection of data from a large population in order to identify patterns, relationships, and trends relevant to educational and social phenomena.

The descriptive survey design was considered appropriate because it enables the researcher to gather both quantitative and qualitative data from respondents regarding their experiences, perceptions, and observations of school facilities and how they influence students' academic performance in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

Population of the Study

The population of this study consisted of 10,000 respondents drawn from three key groups involved in public secondary education in the Federal Capital Territory, Abuja, Nigeria. Students formed the largest group, with 7,000 individuals, as they are the primary beneficiaries of school facilities and directly experience the learning environment. Teachers numbered 2,500 and play a critical role in utilizing available facilities to deliver instruction and influence students' academic performance. School administrators, including

principals and vice-principals, totaled 500 and are responsible for the management, maintenance, and allocation of school facilities.

This composition ensures a comprehensive understanding of how school facilities impact academic achievement, as it captures perspectives from learners, educators, and institutional managers within the education system in the Federal Capital Territory, Abuja, Nigeria.

Table 1: Population of the Study

Category of Respondents	Estimated Population	Percentage (%)
Students	7,000	70
Teachers	2,500	25
School Administrators	500	5
Total	10,000	100

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Sample and Sampling Technique

A sample of 500 respondents was selected using a stratified random sampling technique. The population was divided into three strata: students, teachers, and school administrators. This approach ensured that all sub-groups were proportionately represented in the study, thereby enhancing the reliability and generalizability of the findings.

Students constituted the largest proportion of the sample at 60%, reflecting their central role as the primary beneficiaries of school facilities and their direct experience of the learning environment. Teachers accounted for 25% of the sample, as they are key actors in the teaching-learning process and utilize school facilities to deliver instruction. School administrators made up 15% of the sample, given their responsibility for planning, managing, and maintaining school infrastructure.

The use of stratified random sampling helped to reduce sampling bias and ensured that the perspectives of all relevant stakeholders in public secondary schools were adequately captured. This method is considered appropriate for studies involving heterogeneous populations, as it allows for fair representation of each subgroup (Ogunode & Musa, 2020).

Table 2: Sample Size of the Study

Category of Respondents	Population	Sample Size	Percentage of Sample (%)
Students	7,000	300	60
Teachers	2,500	125	25
School Administrators	500	75	15
Total	10,000	500	100

Instrumentation

Data for this study were collected using a structured questionnaire and an observation checklist. The questionnaire consisted of Likert-scale items ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) and was designed to measure respondents' perceptions of the availability, adequacy, and utilization of school facilities, as well as their impact on students' academic achievement. The items covered key aspects such as classroom conditions, laboratory equipment, library resources, instructional materials, and sanitation facilities.

In addition, an observation checklist was used by the researcher to physically assess the condition and availability of school facilities in selected public secondary schools. This allowed for objective verification of responses provided in the questionnaires and enhanced the validity of the data through triangulation.

The instruments were subjected to face and content validation by three experts in educational management and measurement and evaluation to ensure clarity, relevance, and adequacy in addressing the research objectives. Reliability of the questionnaire was established using Cronbach's alpha, which yielded a coefficient of 0.85, indicating a high level of internal consistency and reliability of the instrument.

Data Collection Procedure

Data collection was carried out over a period of six weeks. Prior to the commencement of the study, ethical approval was obtained from the Faculty of Education Ethics Committee. Permission was also sought from school authorities in the selected public secondary schools within the Federal Capital Territory, Abuja, Nigeria.

Participants were informed about the purpose of the study and assured of confidentiality and anonymity of their responses. Informed consent was obtained from all respondents before participation. The questionnaires were

administered directly to students and teachers within the school premises, while school administrators were engaged through scheduled visits.

The researcher employed both physical distribution of questionnaires and, where necessary, digital forms to ensure wider coverage and improved response rates. The observation checklist was used concurrently during school visits to assess the state of facilities. Completed questionnaires were retrieved immediately where possible, while follow-ups were conducted to ensure a high response rate.

Technique for Data Analysis

Quantitative data obtained from the questionnaires were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize respondents' opinions on the availability and impact of school facilities.

Inferential statistics, including Pearson correlation and regression analysis, were employed to test the research hypotheses. Statistical analysis was carried out using SPSS version 25. The first hypothesis, which examined the relationship between school facilities and students' academic achievement, was tested using Pearson's correlation coefficient. The second hypothesis, which assessed the impact of school facilities on academic performance, was tested using simple linear regression to determine the predictive strength of school facilities on students' academic outcomes.

The combination of descriptive and inferential statistical techniques ensured a comprehensive analysis of the data, allowing for both interpretation of trends and testing of relationships between variables.

Results

Descriptive Statistics

A total of 500 questionnaires were distributed to respondents across selected public secondary schools in the Federal Capital Territory, Abuja, Nigeria. Out of these, 470 questionnaires were duly completed and returned, yielding a high response rate of 94%. This response rate is considered adequate for statistical analysis and enhances the reliability of the study findings.

The respondents comprised 282 students (60%), 118 teachers (25%), and 70 school administrators (15%). The higher proportion of students reflects their central role as the primary beneficiaries of school facilities and their direct exposure to the learning environment. Teachers and administrators also

provided valuable insights into the availability, utilization, and management of school facilities.

Table 1 presents the demographic distribution of respondents involved in the study.

Table 1: Demographic Characteristics of Respondents

Category	Frequency	Percentage (%)
Students	282	60
Teachers	118	25
School Administrators	70	15
Total	470	100

Hypotheses Testing

The study tested two hypotheses to determine the statistical significance of the relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

Hypothesis 1 (H_{01}):

There is no significant relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria.

Table 2: Pearson Correlation between School Facilities and Academic Achievement

Variables	r	p-value	Interpretation
School Facilities	0.71	0.000	Significant

Variables	r	p-value	Interpretation
Academic Achievement			positive

The correlation coefficient ($r = 0.71$, $p < 0.05$) indicates a strong, positive, and statistically significant relationship between school facilities and students' academic achievement. This implies that improved availability and quality of school facilities are associated with better academic performance among students in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

Therefore, the null hypothesis (H_{01}) is rejected, confirming that school facilities play a significant role in enhancing students' academic achievement.

Hypothesis 2 (H_{02}):

School facilities have no significant impact on students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria.

Table 3: Regression Analysis of School Facilities on Academic Achievement

Model	B	t-value	p-value	Interpretation
School Facilities	0.62	10.15	0.000	Significant positive

The regression analysis shows that school facilities significantly predict students' academic achievement ($\beta = 0.62$, $t = 10.15$, $p < 0.05$). This result indicates that as the quality and availability of school facilities improve, there is a corresponding increase in students' academic performance in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

Therefore, the null hypothesis (H_{02}) is rejected, confirming that school facilities have a significant positive impact on students' academic achievement.

Summary of Findings

1. There is a significant relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja Nigeria.
2. School facilities have a significant impact on students' academic performance in public secondary schools in the Federal Capital Territory, Abuja Nigeria.

Discussion of Findings

The findings of this study provide strong empirical evidence that school facilities significantly influence students' academic achievement in public secondary schools in Nigeria, particularly in the Federal Capital Territory, Abuja, Nigeria. The results demonstrate a clear positive relationship between the availability and quality of school infrastructure and students' academic performance. This section critically examines these findings in relation to previous studies and highlights their implications for educational policy and practice.

Firstly, the study established that there is a significant positive relationship between school facilities and students' academic achievement. Schools with adequate and well-maintained facilities were found to record higher levels of student performance compared to those with poor infrastructure. This finding is consistent with Asiyai (2015), who reported that a conducive learning environment enhances students' concentration, motivation, and overall academic engagement. Similarly, Ogunode and Musa (2020) emphasized that adequate classrooms, libraries, and laboratories significantly improve teaching effectiveness and students' learning outcomes. The present study reinforces these findings by demonstrating that improved school facilities contribute directly to better academic achievement among students in the FCT Abuja.

Secondly, the study revealed that school facilities have a significant impact on students' academic performance. Facilities such as well-equipped science laboratories, functional libraries, adequate classroom space, and proper sanitation were found to enhance students' learning experiences and academic success. This aligns with Ibrahim (2021), who found that access to laboratory facilities improves students' performance in science subjects through practical engagement. Additionally, Ajayi and Ekundayo (2023) noted that library resources promote reading culture and independent learning, which are essential for academic excellence. The regression

analysis in this study confirms that school facilities are strong predictors of students' academic outcomes, highlighting their critical role in the education system.

Furthermore, the findings underscore the disparities in facility provision across schools, particularly between urban and rural areas in the Federal Capital Territory, Abuja, Nigeria. Students in schools with limited infrastructure face greater academic challenges, which may contribute to unequal educational outcomes. This observation is supported by Adamu (2025), who identified inadequate school infrastructure as a major barrier to quality education in Nigeria.

The study also supports the human capital theory, which posits that investments in education and learning environments enhance individuals' productivity and societal development. By providing empirical evidence on the relationship between school facilities and academic achievement, the study highlights that improving educational infrastructure is a strategic investment in human capital development and national progress.

Thus, the findings demonstrate that school facilities are not merely supportive elements but fundamental components of effective teaching and learning. Ensuring the availability, adequacy, and proper maintenance of these facilities is essential for improving students' academic achievement and achieving quality education in the Federal Capital Territory, Abuja, Nigeria.

Conclusion

The study has demonstrated that school facilities play a critical role in enhancing students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria. Adequate and well-maintained school infrastructure positively contributes to effective teaching and learning processes, improved student motivation, and better academic outcomes. Students who learn in environments with functional classrooms, equipped laboratories, accessible libraries, and proper sanitation facilities are more likely to achieve higher academic performance.

Furthermore, the study revealed that school facilities significantly influence not only academic achievement but also students' engagement, attendance, and overall learning experience. Despite some progress in infrastructural development, challenges such as inadequate funding, poor maintenance culture, and unequal distribution of facilities across schools continue to hinder optimal academic performance in the FCT Abuja, Nigeria.

Recommendations

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

1. The government and educational authorities should prioritize the provision and upgrading of essential school facilities—such as classrooms, laboratories, libraries, and sanitation infrastructure—to strengthen the positive relationship between school facilities and students' academic achievement in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.
2. School administrators and policymakers should implement regular monitoring, maintenance, and effective utilization of existing facilities, as well as integrate modern instructional resources like ICT tools, to maximize the impact of school facilities on students' academic performance in public secondary schools in the Federal Capital Territory, Abuja, Nigeria.

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