

# **INFLUENCE OF SCHOOL INFRASTRUCTURAL DEVELOPMENT ON TEACHING AND LEARNING PROCESS TOWARDS ENHANCING STUDENTS` ACADEMIC PERFORMANCE IN OLORUNDA LOCAL GOVERNMENT AREA OF OSUN STATE, NIGERIA**

## **Abstract**

The aim of the study was to investigate the influence of infrastructural development on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State. The study was guided by two research questions in which one of the research question was that, does school building have any influence on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State? The design used in the study descriptive survey research design. The population for this study was approximately 1,500 teachers from all the state-owned secondary schools in Olorunda Local Government Area. The study used a sample size of 150 which was 10% of the entire population of the study and employed a simple random sampling technique. The instrument used in the study was questionnaire. Using Cronbach Alpha, a reliability coefficient value of 0.88 was obtained. We used the mean and standard deviation to respond to the two research questions formulated in the study. The finding of the study revealed that school building has a significant influence towards enhancing students` academic performance. Also, the study found out that library facilities have a significant influence towards enhancing students` academic performance. The study concluded that office for staff, reading room for students, dining hall for students, classrooms space for teaching students, common rooms for teachers, halls for exams, classroom management, and teaching in a multicultural setting influences secondary school students` academic performance. The implication of the study is that if government continues to fail in providing building and library facilities to schools, the academic performance of learners will continue to drop. The study recommended that Osun State government should ensure that adequate classrooms are built in all the secondary schools in Olorunda Local Government Area of Osun State, Nigeria.

**Keywords:**School, Infrastructural development, Academic performance, School building and Library facilities

## **Introduction**

The significance of infrastructure development in influencing the teaching and learning process is paramount. The quality of educational infrastructure is globally acknowledged as fundamental for successful education delivery, impacting both student experiences and instructor efficacy (Barrett et al., 2019). Well-equipped classrooms, sufficient resources, and contemporary technology cultivate an atmosphere conducive to academic performance for students. Infrastructural development extends beyond mere physical structures; it includes vital educational resources, libraries, labs, and ICT facilities, which are needed for contemporary education (Nwuke&Nwanguma, 2024; Baporikar, 2024). Multiple studies have highlighted the link between excellent infrastructure and enhanced academic performance, demonstrating that supportive learning environments foster student engagement, motivation, and performance.

In Nigeria, infrastructure deficiencies in the education system persist as a significant concern, with several schools devoid of essential amenities to facilitate efficient teaching and learning. The Olorunda Local Government Area in Osun State exemplifies this pattern. Educational institutions in this area often contend with deteriorating infrastructure, overcrowded classrooms, insufficient laboratory apparatus, and restricted access to digital technology. These issues substantially influence the teaching and learning process, impeding students' academic performance and demoralising educators. Notwithstanding several governmental and private sector initiatives, infrastructure deficiencies persist, resulting in a mismatch between urban and rural schools and intensifying the gap in academic performance. The teaching profession is intrinsically challenging, and insufficient infrastructure exacerbates these difficulties (Akram et al., 2021; Hennessy et al., 2015).

Teachers in Olorunda have challenges in efficiently teaching the curriculum in inadequately equipped schools, which undermines their work satisfaction and affects the quality of education offered. Consequently, students are deprived of practical, interactive, and engaging educational experiences, resulting in reduced academic performance (Banerjee, 2016). The absence of functioning libraries and access to digital resources hinders students' capacity to cultivate critical thinking abilities and pursue independent study, leaving them inadequately equipped for global competition (Uzomba, 2014).

The deficiency in infrastructure development impacts not just academic environments but also has wider socioeconomic ramifications. Insufficient facilities deter family engagement in school activities and diminish community confidence in the education system (Baker et al., 2016). This tendency leads to elevated dropout rates, subpar educational performance, and diminished potential for economic growth and social development in the area. Resolving these difficulties is crucial for establishing a fair and resilient education system that conforms to national and international educational standards (Care et al., 2018; Ecclestone, & Lewis, 2014).

Empirical research has continually emphasised the significance of educational infrastructure in attaining sustainable development objectives. Research indicates that the provision of sufficient resources is substantially in line with student success and instructor productivity (Della-Sala et al., 2017; Akungu, 2014). In Olorunda, the disparity between policy design and execution has resulted in little advancement in closing the infrastructure deficit. Despite the emphasis on infrastructure enhancement in educational policy, insufficient finance and bureaucratic obstacles persistently hinder their implementation (Simbanegavi, 2019; Abugre, 2018).

Notwithstanding governmental initiatives like the Universal Basic Education program, infrastructure deterioration continues at several schools in Olorunda. Oyinloye (2021) and Ekong (2016) assert that stakeholders, such as parents, educators, and educational officials, often express apprehensions over the sufficiency of these interventions. This prompts essential enquiries on the efficacy of existing methods and the pressing need for focused tactics that tackle the specific issues encountered by schools in this local government area.

The association between infrastructure development and academic performance requires a thorough examination of this dynamic. Badmus (2023) and Adeagbo (2021) stated that schools that possess contemporary teaching resources, adequate ventilation, and favourable learning environments often achieve superior student performance. In contrast, Botha (2022) and Ajimudin (2021) stated that students in under-resourced schools encounter distractions, discomfort, and obstacles to learning, which eventually manifest in their academic performance. Therefore, comprehending the relationship between infrastructural development and academic performance is essential for formulating practical suggestions to enhance the education sector.

This research aims to investigate the impact of infrastructure development on the educational process in Olorunda Local Government Area of Osun State, emphasising its influence on academic performance. The current research mostly focusses on infrastructure concerns at the state or national levels, often neglecting localised dynamics and their direct influence on educational results. This study seeks to address this deficiency by investigating certain architectural obstacles in Olorunda and analysing their effects on both educators and learners. The research will provide a detailed comprehension of the issue and suggest actionable suggestions for stakeholders, therefore aiding in the enhancement of academic performance and educational equality in the area.

The main aim of the study was to investigate the influence of infrastructural development on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State, Nigeria. Specifically, the study sought to investigate the:

- Influence of school building on teaching and learning process towards enhancing secondary school students' academic performance in Osun State.
- Influence of library facilities on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State.

The study was guided by two research questions.

- Does school building have any influence on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State?
- Is there any influence of library facilities on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State?

## **Methods**

The study used descriptive survey research design. According to Ezeudu et al (2020) assert that descriptive survey research design ascertains current information on a phenomena within a population in relation to the variables being examined. The study was conducted in Olorunda Local Government Area of Osun State, Nigeria. Olorunda is a local government area located in Osun State, Nigeria. The headquarters are located at Igbona, on the periphery of the state capital, Osogbo. The region is 97 km<sup>2</sup>, with a population of 131,761 according to the 2006

census, mostly of Yoruba people. The primary activity of the populace is agriculture, with cocoa, yam, and cassava being the principal crops cultivated. Oludoyin (2023) indicates that the research region has a tropical dry and wet climate. Oludoyin said that the wet season starts in April and concludes in early October, whereas the dry season extends from November to March. A dry and chilly harmattan wind, originating from the Sahara Desert, marks the period from December to January.

The population for this study was teachers from all the state-owned secondary schools in Olorunda Local Government Area. The study used a sample size of 150 and employed a simple random sampling technique. The study employed the "Influence of Infrastructural Development on Teaching and Learning Process Questionnaire" as its instrument. The instrument contains two sections, which are section A and section B. The instrument's Section A holds the bio-data of the respondents, while Section B organises the question items into three clusters. Cluster A contains 8 items and solicited information from the respondents on the influence of school building on student's academic performance and cluster B contains 8 items and solicited information on the provision of library facilities influence on student's academic performance. The instrument was in 4 likert scale of strongly agree, agree, disagree and strongly disagree which were rated 4, 3, 2, and 1. All the 16 items were positively skewed.

Three experts in the fields of educational management, planning, measurement, and evaluation validated the instrument. To ascertain the reliability level of the instrument, a trial testing was carried out in the Boriipe Local Government Area, which is outside the study area. The questionnaire was administered on 50 secondary school teachers in Boriie Local Government Area of Osun State, Nigeria. After retrieving the questionnaire from the teachers and to

determine the reliability level of the instrument, Cronbach Alpha statistical test was used. Using Cronbach's alpha, reliability values of 0.87 were obtained on the cluster A instrument while 0.86 was obtained on the cluster B instrument. The Statistical Package for Social Science Version 23 which was used to run the reliability test shows an overall coefficient value of 0.88 on all the 16 items. The reliability coefficient values obtained from each of the clusters, which were above 0.70, show that the instrument was highly reliable and was used for the main study.

Two research assistants assisted in collecting the data. All the 150 questionnaires that were administered were properly filled out and collected in full from the respondents, making the return rate of the study 100%. We used all 150 questionnaires for the analytical aspect of the study with the assistance of SPSS software. The researchers used the mean and standard deviation to respond to the two research questions formulated in the study. Since the present study focuses on rating scales, the mean provides the most appropriate summary statistics of the respondents, considering the magnitude of each data point and that serves as the justification for the use of mean in this study. Any mean value below 2.5 was disagreed and the ones above 2.50 were agreed upon.

## **Results**

### **Research Question One:**

What is the influence of school building on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government Area of Osun State? The data for responding to the first research question is presented in the below table tagged table 1.

**Table 1: Responses on the Influence of School Building on Student's Academic Performance**

*n = 150*

<b>Item Statement: Influence of School Building</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Remarks</b>
1. Office for Staff.	3.03	.65	Agree
2. Reading rooms for students.	3.03	.72	Agree
3. Dining hall for students.	3.23	.65	Agree
4. Classroom spaces for teaching students.	3.05	.72	Agree
5. Common rooms for teachers.	3.05	.70	Agree
6. Halls for exams	3.08	.63	Agree
7. Class management.	3.23	.62	Agree
8. Teaching in a multicultural setting.	3.05	.63	Agree
<b>Cluster Mean</b>	<b>3.09</b>	<b>.67</b>	<b>Agree</b>

Table 1 presents the mean response values of the respondents, the teachers, with an overall mean of 3.09, which shows that the respondents agree with the items. The overall mean of 3.09 indicates that school buildings significantly influence students' academic performance at secondary schools in Osun State. Regardless, considering the average responses received, the respondents (the teachers) agreed that there should be an office for staff (3.03), a reading room for students (3.03), a dining hall for students (3.23), classroom space for teaching students (3.05), common rooms for teachers (3.05), halls for exams (3.08), classroom management (3.23), and teaching in a multicultural setting (3.05). Conversely, the participants agreed to the items, as seen by their mean values of 3.03, 3.03, 3.23, 3.05, 3.05, 3.08, 3.23, and 3.05 for items 1, 2, 3, 4, 5, 6, 7, and 8 respectively. The responses from the respondents showed that school building has a significant influence towards enhancing students' academic performance.

### **Research Question Two:**

What is the influence of library facilities on teaching and learning process towards enhancing secondary school students' academic performance in Olorunda Local Government

Area of Osun State? The data for responding to the second research question is presented in the below table tagged table 2.

**Table 2: Responses on the Influence of Library Facilities on Student’s Academic Performance**

*n = 150*

<b>Item Statement: Influence of Library Facilities</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Remarks</b>
9. Provision of school library influence students’ academic performance.	3.13	.68	Agree
10. Provision of furniture in the school library influence students’ academic performance.	3.43	.78	Agree
11. Textbooks in the school library loaned out to students influence their levels of academic performance.	3.23	.62	Agree
12. Provision of electricity in the library will influence the students’ academic performance.	3.35	.70	Agree
13. School library stocked with textbooks influence students’ academic performance.	3.05	.66	Agree
14. Provision of electronic library in the school influence students’ academic performance.	3.08	.76	Agree
15. Provision of pamphlets, magazine newspapers and journals, past and current in the school library influence academic performance.	3.66	.82	Agree
16. Access to school library influence students’ academic performance.	3.09	.67	Agree
<b>Cluster Mean</b>	<b>3.25</b>	<b>.71</b>	<b>Agree</b>

Table 2 presents the mean response values of the respondents, who are teachers, with an overall mean of 3.25, which shows that the respondents agree with the items. The overall mean of 3.25 indicates that library facilities significantly influence students' academic performance at secondary schools in Osun State. Regardless, considering the average responses received, the respondents (the teachers) agreed that there should be provision of school library influence students’ academic performance (3.13), Provision of furniture in the school library influence students’ academic performance (3.43), textbooks in the school library loaned out to students influence their levels of academic performance (3.23), provision of electricity in the library will influence the students’ academic performance (3.35), school library stocked with textbooks

influence students' academic performance (3.05), provision of electronic library in the school influence students' academic performance (3.08), Provision of pamphlets, magazine newspapers and journals, past and current in the school library influence academic performance (3.66), and access to school library influence students' academic performance (3.09). Conversely, the participants agreed to the items, as seen by their mean values of 3.13, 3.43, 3.23, 3.35, 3.05, 3.08, 3.66, and 3.09 for items 9, 10, 11, 12, 13, 14, 15, and 16 respectively. The responses from the respondents showed that library facilities have a significant influence towards enhancing students' academic performance.

### **Discussion of Findings**

The findings in Table 1 revealed that building structures influence students' academic performance in secondary schools in Olorunda Local Government Area of Osun State, Nigeria. The respondents identified office for staff, reading room for students, dining hall for students, classroom space for teaching students, common rooms for teachers, halls for exams, classroom management, and teaching in a multicultural setting as the primary factors influencing students' academic performance in secondary schools in Olorunda Local Government Area of Osun State, Nigeria regarding infrastructure. The aforementioned findings align with the viewpoints of Okafor (2013) and Lew (2010) that school structures and classroom arrangements for teaching and learning enhance students' academic performance.

Table 2 reveals that the organisation of library facilities influences students' academic performance in secondary schools in Olorunda Local Government Area of Osun State, Nigeria. The teachers believe that provision of school library, provision of furniture in the school library, textbooks in the school library loaned out to students, provision of electricity in the library,

school library stocked with textbooks, provision of electronic library in the school, provision of pamphlets, magazine newspapers and journals, past and current in the school library, and access to school library have positive influence on secondary school students' academic performance. This finding was in cognizance with that of Toby (2012) which revealed that the library is a fundamental element of school environments, contributing to students' academic performance. Also, the findings of this study was in line with the findings of Alharbi and Middleton (2012), who observed that the library should cultivate in students the skills and habits of observation, listening, communication of ideas, and critical thinking, which they will build upon as they advance in their educational careers; to achieve this, children must be exposed to a diverse array of books.

### **Educational Implications of the Study**

The design of school facilities has a crucial role in students' academic performance. Consequently, there is a need for the establishment of staff offices, adequate classroom accommodations, and reading areas inside the school to enhance students' academic performance. Enhancing teachers' performance will further enhance effective teaching and learning. The organisation of library facilities in secondary schools in the Olorunda Local Government Area of Osun State, Nigeria, should be prioritised.

The majority of secondary school libraries lack adequate textbooks for both reading and borrowing. Students often do not use the school library, maybe because they are not there at all. The organisation of sufficient resources in the library and the establishment of an electronic library in the school will positively influence students' academic performances.

## **Limitations of the Study**

The following were the limitations of the study:

- **Resources Constraint:** Financial challenges make it difficult for the researchers to have included additional local government areas within the state in the study.
- **Complexity of Variables:** Since the study focuses on secondary school infrastructural development as a key influence on teaching and learning, this could not fully be used to account for other factors affecting secondary school students' academic performance, such as teachers' years of teaching experiences, educational qualification and others.
- **Sample Size:** The sample size used in the study might not be a proper representation of the entire population of the study and thereby affect the reliability of the findings.

## **Conclusion**

The study concluded that office for staff, reading room for students, dining hall for students, classrooms space for teaching students, common rooms for teachers, halls for exams, classroom management, and teaching in a multicultural setting influences secondary school students' academic performance. Also, the study concluded that provision of school library, provision of furniture in the school library, textbooks in the school library loaned out to students, provision of electricity in the library, school library stocked with textbooks, provision of electronic library in the school, provision of pamphlets, magazine newspapers and journals, past and current in the school library, and access to school library have positive influence on secondary school students' academic performance.

## **Recommendations**

The study makes the following recommendations.

- Osun State government should ensure that adequate classrooms are built in all the secondary schools in Olorunda Local Government Area of Osun State, Nigeria.
- Osun State government should ensure that all secondary schools libraries in Olorunda Local Government Area are well equipped with adequate learning materials.

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