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Research

School Environment as Correlate of Students' Academic Achievement in Secondary Schools in Sokoto State, Nigeria

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Abstract: This study examined the relationship between school environmental factors and students' academic achievement among secondary schools in Sokoto state. The study adopted a correlational research design. A structured questionnaire was administered to a sample of 379 students from selected secondary schools in Sokoto state. The data collected was analysed using multiple linear regression analysis. The findings revealed that the classroom environment has a positive and significant relationship with students' academic achievement ($\beta = .148$, $t = 2.506$, $p = 0.13$). Further findings revealed that teacher-student interaction has a positive and insignificant relationship with students' academic achievement ($\beta = 0.024$, $t = .437$, $p = .662$). The results also showed that learning resources have a positive and significant relationship with students' academic achievement ($\beta = .238$, $t = 3.830$, $p < .001$). It was concluded that the school environment is significantly related to students' academic achievement. It was recommended that policymakers should focus on improving classroom conditions and providing adequate learning materials, among others.

Keywords: School Environment, Academic Achievement, Learning Resources, Classroom Environment, Teacher-Student Interaction.

Introduction

Education is a fundamental factor in the progress of any nation, including Nigeria. The country's adoption of Western education emphasises individualism, socio-economic growth, and globalisation, all of which contribute to national development. The school environment substantially affects academic performance (Olatoye & Agbatogun, 2020). The location of a school also influences students' achievement. For instance, schools situated in noisy areas such as sports arenas, motor parks, airports, or busy urban centres experience disruptions in the teaching-learning process, which can negatively impact

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students' academic success. Noise generally interferes with effective teaching and learning. Additionally, the school's physical structure, along with teacher-student interactions, significantly affects student performance. A school's climate can either support a healthy learning environment or hinder academic progress (Umar & Hassan, 2021).

The school environment is generally defined by its infrastructure, classrooms, health support services, and disciplinary policies. It plays a crucial role in shaping external factors that influence students. A conducive school environment is characterised by adequate facilities, well-organised classrooms, accessible health support systems, and a clear, fair disciplinary framework. Schools with a positive atmosphere exhibit key academic, behavioural, and physical qualities that foster effective learning. The quality of education is not solely dependent on teachers' performance but also on the efficient management of the school environment (Adeyemi & Adeyemi, 2020). As a result, the school environment has a significant relationship with students' learning outcomes and overall development.

Academic achievement is a crucial indicator of educational success and is influenced by various factors, including personal, socio-economic, and environmental variables. Among these, the school environment plays a pivotal role in shaping students' learning experiences. A positive school environment fosters engagement, motivation, and academic excellence. However, secondary schools in Sokoto State face infrastructural and instructional challenges that impede students' academic progress. This study investigates how school environment variables, such as classroom conditions, teacher-student relationships, and learning resources, contribute to students' academic performance.

Literature Review

Classroom Environment and Academic Performance: The physical and psychological conditions of classrooms significantly influence students' ability to concentrate and perform well academically. Adequate lighting, ventilation, seating arrangements, and noise levels are essential for creating a conducive learning atmosphere (Brown, 2021). Furthermore, the school environment plays a pivotal role in shaping students' academic outcomes and overall development. Research has shown that a conducive school environment fosters effective teaching and learning by providing the necessary resources, infrastructure, and psychological support (Adeogun & Olisaemeka, 2021). For instance, schools with well-equipped classrooms, libraries, laboratories, and recreational facilities tend to enhance students' engagement and motivation to learn (Okafor & Eze, 2022).

Teacher-student interaction is another factor that affects students' learning, where effective teacher-student relationships enhance student motivation, engagement, and academic achievement. Studies suggest that students with supportive and approachable teachers tend to perform better than those in hostile learning environments (Smith & Jones, 2022). Therefore, the psychological climate of a school, which includes teacher-student interaction, peer interactions, and a sense of belonging, significantly influences students' academic performance and well-being (Ajayi & Ogunyemi, 2023). In addition to physical and psychological factors, school policies and practices also contribute to the overall learning environment. For example, policies that promote inclusivity, discipline, and health education have been found to positively impact students' academic achievement and social development (Okeke & Mtyuda, 2022).

On the availability of learning resources, the presence of textbooks, laboratory equipment, and digital learning tools directly impacts students' academic performance, which is limited in this area. Limited access to essential resources often results in poor comprehension and lower academic outcomes (Williams et al., 2023). Conversely, schools located in noisy or disruptive environments, such as near motor parks, airports, or busy urban centres, often face challenges in maintaining a conducive learning atmosphere, which can negatively affect students' academic success (Umar & Hassan, 2021). Studies have also highlighted the importance of addressing barriers to learning, such as inadequate facilities, overcrowded classrooms, and insufficient instructional materials. These factors can hinder effective teaching and learning, particularly in under-resourced schools (Eze & Ezenwafor, 2023).

More studies have identified multiple factors contributing to students' poor academic performance. These include ineffective study habits, lack of learning resources, an unfavourable school climate, indiscipline, inadequate facilities, ineffective teachers, poor teaching methods, and an unconducive learning environment for both students and teachers (Adeogun & Olisaemeka, 2021). The authors suggest that students' weak academic performance at the primary level may reflect the quality of their learning environment. Similarly, it has been noted that an inadequate school environment could negatively impact students' academic achievements, particularly when it lacks a positive climate, instructional resources, discipline, and essential physical infrastructure (Okeke & Mtyuda, 2022). Other factors, such as unqualified teachers, unfavourable school locations, overcrowded classrooms, and small class sizes, can also hinder students' performance (Eze & Ezenwafor,

2023). The availability of sufficient instructional resources is essential for effective teaching and learning. While teaching and learning are interconnected, students can still learn independently without direct instruction from teachers (Ajayi & Ogunyemi, 2023).

Problem Statement

The impact of the school environment on students' academic performance has become a significant concern for all stakeholders in the education sector. Despite extensive research on factors influencing academic achievement, the specific contributions of school environmental factors remain underexplored in Sokoto State. Reports from the Ministry of Education in Sokoto (2024) reveal that since 2020, more than 50% of students who sit for the National Examination Council (NECO) examinations do not pass on their first attempt. This has led to inconsistent performance among SS3 students, with outcomes varying significantly from school to school. Such inconsistencies undermine the future prospects of many students, particularly those in schools that persistently perform poorly.

Numerous studies have identified several factors contributing to poor academic performance, including classroom environment, teacher-student interaction, and the availability of learning resources. These factors significantly influence students' performance and highlight the importance of a conducive school environment in enhancing academic achievement. However, in Sokoto State, the school environment is far from ideal. Many schools lack adequate infrastructure, and learning resources are insufficient. Infrastructural facilities are often in a state of disrepair, and there is a noticeable lack of meaningful teacher-student interaction. These deficiencies are likely to negatively affect students' academic achievement.

This study aims to bridge the existing gap by examining the role of school environment variables, such as classroom conditions, teacher-student relationships, and the availability of learning resources, in determining academic success in Sokoto State. By doing so, it seeks to provide insights that can inform policies and interventions to improve the quality of education and student outcomes in the region.

Research Objectives

1. Examine the relationship between the classroom environment and students' academic achievement in Sokoto State.
2. Assess the relationship between teacher-student interaction and students' performance in Sokoto State.

3. To evaluate the relationship between learning resources and academic success in Sokoto State.

Hypotheses

H1: There is no significant relationship between classroom environment and students' academic achievement in Sokoto State.

H2: There is no significant relationship between teacher-student interaction and students' academic performance in Sokoto State.

H3: There is no significant relationship between the availability of learning resources and students' academic success in Sokoto State.

Methodology

To achieve the objectives of the study, a correlational research design was employed. The study population consisted of 26,111 students from 20 secondary schools in Sokoto State, as reported by the Ministry of Education, Sokoto (2019). These schools are under the supervision of the Ministry of Education and include both male and female students. A sample of 379 students was selected randomly from eight secondary schools within Sokoto State using clustered sampling. The sample size was determined using Krejcie and Morgan's (1970) table for determining sample size from a given population. Data collection was conducted using a structured questionnaire adapted from validated academic environment scales. The questionnaire was designed to capture key variables related to the school environment and students' academic achievement. Data analysis involved descriptive statistics to summarise the data, Pearson correlation to examine relationships between variables, and multiple regression analysis to test the research hypotheses and address the study's objectives. These analytical tools were chosen to provide a comprehensive understanding of the influence of the school environment on students' academic performance.

Results and Interpretation

Model Summary[b]

						Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.355[a]	.126	.119	.58428	.126	18.018	3	375	.000	1.799

a. Predictors: (Constant), Learning Resources, Teacher-Students-Interaction, Classroom Environment

b. Dependent Variable: Academic Achievement

The results in the table present the coefficient of determination. The model explains 11.9% of the variance in students' academic achievement in Sokoto State, with an adjusted R^2 of .119. The coefficient of determination, as measured by R-square (0.126), shows that learning resources, teacher-student interaction, and classroom environment explain 11.9% of the total variation in students' academic achievement, while 88.1% were captured by the estimated residual. This implies that the stochastic disturbance error term (ε) covers 88.1%. Furthermore, Durbin-Watson was used to test for the presence of serial correlation or autocorrelation among the error terms. The model also indicates that there is no autocorrelation among the variables, as indicated by the Durbin-Watson (DW) statistic of 1.799 (as the acceptable Durbin-Watson range is between 1.50 and 2.40).

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.453	3	6.151	18.018	.000[b]
	Residual	128.020	375	.341		
	Total	146.473	378			

a. Dependent Variable: Academic Achievement

b. Predictors: (Constant), Learning Resources, Teacher-Students-Interaction, Classroom Environment

The result in the table shows that the model was significant, $F(3, 375) = 18.018$, $p < 0.001$, indicating that at least one predictor significantly affects students' academic achievement.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.685	.234		7.195	.000					
	Classroom Environment	.165	.066	**.148**	**2.506**	**.013**	.291	.128	.121	.668	**1.496**
	Teacher-Students-Interaction	.031	.070	**.024**	**.437**	**.662**	.173	.023	.021	.807	**1.240**
	Learning Resources	.289	.076	**.238**	**3.830**	**.000**	.332	.194	.185	.606	**1.650**

a. Dependent Variable: Academic Achievement

The findings of the multiple linear regression study for the relationship between school environment and students' academic achievement are displayed in the table above. The results showed that the classroom environment ($\beta = .148$, $t = 2.506$, $p = .13$) has a positive and significant relationship with students' academic achievement, while

teacher-student interaction (β = .024, t = .437, p = .662) has a positive and insignificant relationship with students' academic achievement. The results also showed that learning resources have a positive and significant relationship with students' academic achievement (β = .238, t = 3.830, p < .001).

Collinearity statistics

From the table, the Variance Inflation Factor (VIF) for each predictor was well below the threshold value of 5, which dispels multicollinearity concerns. Collectively, these diagnostic tests validated the key assumptions underpinning our multiple linear regression model, providing a solid groundwork for the data analysis.

Correlations

		Academic Achievement	Classroom Environment	Teacher-Students-Interaction	Learning Resources
Pearson Correlation	Academic Achievement	1.000	.291	.173	.332
	Classroom Environment	.291	1.000	.319	.570
	Teacher-Students-Interaction	.173	.319	1.000	.431
	Learning Resources	.332	.570	.431	1.000
Sig. (1-tailed)	Academic Achievement	.	.000	.000	.000
	Classroom Environment	.000	.	.000	.000
	Teacher-Students-Interaction	.000	.000	.	.000
	Learning Resources	.000	.000	.000	.
N	Academic Achievement	379	379	379	379
	Classroom Environment	379	379	379	379
	Teacher-Students-Interaction	379	379	379	379
	Learning Resources	379	379	379	379

The table shows the correlation between independent variables. Generally, high correlation is expected between dependent and independent variables, while low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent variables above 0.80 is considered excessive, and thus certain measures are required to correct that anomaly in the data. From the table, it can be seen that all the correlation coefficients among the independent variables are below 0.80. This points to the absence of possible multicollinearity, though the variance inflation factor (VIF) is still required to confirm the assumption. Results from the table further reveal a positive correlation between the dependent variable (students' academic achievement) and the explanatory variables (Classroom Environment, Teacher-Students Interaction, and Learning Resources). This implies that the explanatory variables move in the same direction as students' academic achievement. Independent variables showed a positive correlation, implying that an increase in independent variables will increase students'

academic achievement. This means that the level of correlation among all the independent variables has a harmless effect.

Discussion

Findings suggest that a well-structured classroom environment, positive teacher-student relationships, and adequate learning resources are key determinants of academic success. Schools with better infrastructure and supportive teaching staff tend to produce higher-achieving students. These results align with previous studies (Anderson, 2020; Roberts et al., 2021), reinforcing the importance of school environmental factors in academic performance.

Conclusion

The study concluded that creating a conducive school environment is essential for enhancing students' academic achievement. This means that there is a significant moderate relationship between students' study environment and their academic achievement in economics. It is also important to note that the findings of this research indicated that the school environment significantly influences students' academic performance. As observed from the research, students from schools with adequate learning facilities, good teacher-student relationships, and a favourable learning environment perform well. Therefore, the research concludes that the school environment does influence students' academic performance.

Recommendations

Based on the findings of this study and the conclusions, the following recommendations were made:

i. Policymakers should focus on improving classroom conditions.

ii. And providing adequate learning materials

Future research should explore additional environmental variables, such as peer influence and extracurricular activities.

- The school should provide an enabling environment for students to have full concentration from the beginning to the end of a lesson.
- The teachers should establish an enabling environment for easy consultation with their students.
- Appropriate school authorities should enable the provision of a conducive school environment that has a good climate for effective teaching and learning. Such an

environment should ensure that teaching and non-teaching staff, as well as students, are treated fairly by teachers.

- Effective school discipline should be encouraged by head teachers in controlling teachers' and students' behaviour for good academic achievement in secondary schools.
- Teachers should understand and appreciate the diverse domestic environments of their students.
- Parents should actively involve themselves with school authorities about their children's education to enable them to understand the progress or otherwise of their children.

References

1. Adeogun, A. A., &Olisaemeka, B. U. (2021).The role of instructional resources in enhancing academic performance in Nigerian secondary schools. African Educational Research Journal, 9(1), 23–34.
2. Adeyemi, T. O., &Adeyemi, M. B. (2020).The influence of school environment on students' academic performance in secondary schools in Nigeria. Journal of Educational and Social Research, 10(2), 45–56.
3. Ajayi, K. O., &Ogunyemi, F. O. (2023). Disciplinary policies and academic performance in Nigerian secondary schools: A case study of Sokoto State. African Journal of Educational Management, 25(1), 89–102.
4. Anderson, P. (2020). The Role of School Environment in Learning.Academic Press.
5. Brown, K. (2021). Classroom Dynamics and Student Performance. Education Journal, 45(2), 112–130.
6. Eze, T. I., &Ezenwafor, J. I. (2023).The effect of classroom size and overcrowding on students' learning outcomes in Nigerian schools. Journal of Pedagogy and Educational Science, 5(2), 67–79.
7. Okafor, C. F., & Eze, P. U. (2022).The impact of school facilities on students' academic performance in rural and urban secondary schools in Nigeria. Journal of Educational Research and Reviews, 10(3), 45–58.
8. Okeke, C. I., & Mtyuda, P. N. (2022). Teacher qualifications and students' academic achievement in Nigerian secondary schools: A comparative analysis. International Journal of Learning, Teaching and Educational Research, 21(4), 112–125.
9. Olatoye, R. A., &Agbatogun, A. O. (2020).School climate and academic performance of secondary school students in Lagos State, Nigeria. International Journal of Educational Research, 99, 101–112.
10. Roberts, M., Johnson, T., & Lee, S. (2021). Improving Academic Outcomes through School Infrastructure.Learning Review, 39(4), 201–215.

11. Smith, J., & Jones, L. (2022).Teacher-Student Relationships and Academic Success. Educational Research, 56(3), 78–92.

12. Umar, A., & Hassan, A. S. (2021).Impact of school location on students' academic performance in Sokoto State, Nigeria. Journal of Education and Practice, 12(3), 78–89.

13. Williams, R., Clark, H., & Thomas, P. (2023).Resource Availability and Student Performance in Secondary Schools. Journal of Educational Development, 48(1), 55–70.