

Determinants of Academic Achievement in Nigerian Secondary Schools: Leadership, Environment, and Motivation

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Abstract

Secondary school principals play crucial roles in determining the success or otherwise of educational institutions. However, very little has been documented about these roles. The primary objective of the study was to examine the impact of principals' leadership attributes, school effectiveness, and study environment on students' academic achievement in Lagos State. The study adopted a cross-sectional survey design and utilized a multistage sampling technique to select 10 public secondary schools and 150 teachers in two local government areas. A validated questionnaire was used to gather data from the teachers. The 2024 NECO Mathematics score of students in the selected schools was used to measure their academic performance. Findings revealed a significant positive correlation between principal leadership attributes (engagement, $r = 0.557$; system thinking, $r = 0.607$; leading thinking, $r = 0.654$; self-awareness, $r = 0.620$) and school effectiveness. The effect of the study environment on students' academic performance was statistically significant ($b = 1.138$, $p < 0.05$). Self-awareness had a significant effect on students' academic performance. The study concluded that policymakers and education management should prioritize professional development programs focused on enhancing principal self-awareness and leadership skills to enhance secondary school effectiveness and students' performance outcomes.

Keywords: Leadership Attributes, School Environment, Motivation, Academic Achievement, Secondary School, Nigeria

Introduction

Academic achievement in secondary schools serves as a critical indicator of a nation's educational quality and future human capital development. Elements of school leadership, learning environment, as well as teachers and students' motivation are widely acknowledged in educational literature as crucial determinants of success (Ojoma, 2025; Akinnubi, Ajape & Adeoye, 2024; Ugwuanyi & Pietsch, 2024). However, research on the relationship and

combined effect of these variables within the Nigerian context remains underexplored (Akinubi et al, 2024).

This topic is of significant importance given the current concerns over declining academic performance and the overall quality of education in Nigeria (Gidado, Apeh, & Akinwande, 2023). Identifying and understanding the factors that most strongly influence student outcomes can guide stakeholders in implementing targeted interventions. Leadership, for instance, affects how schools are managed and how policies are translated into actionable plans (Ojoma, 2025). In addition, a conducive learning environment ensures physical and emotional safety necessary for effective teaching and learning (Gidado et al., 2023). Both intrinsic and extrinsic motivation directly impact student engagement, persistence, and academic outcomes (Adesua, 2023; Otaru & Omokide, 2019).

The study is particularly beneficial to educational policymakers at both federal and state levels. Its findings provide empirical evidence that can inform policy decisions aimed at improving secondary education quality. Insights into the importance of strong leadership and conducive learning environments can guide the development of teacher training programs, infrastructure investments, and administrative reforms (Ugwuanyi & Pietsch, 2024; Oyekola et al, 2020; Otaru & Omokide, 2019). It can also help in crafting motivation-driven curricula and assessment strategies that align with students' diverse needs and aspirations.

School principals, administrators, and teachers stand to gain valuable insights from this study regarding how their roles and behaviours influence student achievement. The study provides understanding of the impact of leadership style and classroom management practices, which can lead to more collaborative, student-centered approaches. This enables teachers to better appreciate the role of motivation in learning and adopt teaching methods that promote student engagement and perseverance (Akinubi et al, 2024; Okotie, & Adeyemi, 2019). Moreover, research has shown that positive teacher-student relationships, improved classroom interactions, and enhanced academic performance (Gidado et al, 2023; Otaru & Omokide, 2019).

Furthermore, Students are the direct beneficiaries of improved educational conditions and practices, which this study seeks to promote. According to (Adesua, 2023; Famolu, 2021), when schools are better led, environments are more supportive, and motivation is nurtured, students are more likely to perform well academically and develop holistically (Ojoma, 2025). Moreover, the broader community benefits from a better-educated youth population that can contribute to social and economic development (Oyekola et al, 2020; Igwe, Ndidiamaka, & Chidi, 2017). The long-term impact of this research could be a more equitable and effective education system that empowers Nigerian youth and strengthens national progress.

In Nigeria, principals of secondary schools are uniquely positioned to utilize human and material resources to achieve the established goals of their schools (Widodo, Gustari & Permana, 2023). It is imperative for principals to identify and support the professional development needs of teachers to enhance the development of secondary schools into centers of excellence (Umar et al., 2021). The increasing concern over the differential academic achievements of secondary school students in Nigeria has sparked significant

interest among educators, government officials, and parents (Widodo et al, 2023; Oyewole, 2017).

Despite various educational reforms in Nigeria, many secondary schools continue to record low student achievement, particularly in national examinations such as the Senior School Certificate Examination (SSCE), administered by the National Examination Council (NECO), and the West African Examination Council (WAEC) (Umejiaku, 2023; Aina & Ayodele, 2018). The study by Aina & Ayodele (2018), revealed a worrying trend of high failure rates among these critical secondary school examination bodies, highlighting a steep decline in the quality of secondary education. The failure to achieve credits in essential subjects such as Mathematics by a vast majority of students over recent years underscores the gravity of the situation (Alwadood et al., 2018). This raises critical questions about what truly drives performance beyond curriculum design. While studies have addressed these factors independently, few have analyzed their interconnectedness within the Nigerian setting (Famolu, 2021; **Oyekola**, Ishola & Odedokun, 2020; Okotie & Adeyemi, 2019). The need for this study stems from the urgency to develop data-driven strategies that align educational leadership practices, school environments, and motivational supports with improved academic outcomes.

This crisis in secondary school education is often attributed to factors such as poor motivation of teachers, as a result of insufficient funding of the education sector by the government. Umejiaku (2023) observed that one of the primary contributors of poor performance in basic subjects is the poor motivation of teachers. This stems largely from inadequate remuneration, lack of professional development, and unfavourable working conditions. According to Ogunode, Ojochnemi & Ayoko (2023), this demotivation is closely linked to insufficient funding of the education sector by the government, which results in under-resourced schools, overcrowded classrooms, outdated teaching materials, and limited access to modern technology.

In addition, the school environment plays a critical role in shaping the academic performance of secondary school students. Factors such as classroom conditions, availability of instructional materials, teacher-student ratio, sanitation, and access to learning technologies significantly influence teachers' and students' motivation, concentration, and overall learning outcomes (Ogunode, 2021; Jalapang & Raman, 2020). However, in many Nigerian secondary schools, the poor students' performance has been exacerbated by the deterioration of these environmental indices, leading to poorly maintained infrastructure, overcrowded classrooms, lack of essential teaching aids, and inadequate welfare for both students and teachers (Abubakar, Diri, Shuaibu, Dakin-Gari, Dakin-Gari, Sani, Abdullahi, & Lailaba, 2023). This underinvestment may not only hamper the delivery of quality education but also create an uncondusive learning atmosphere that stifles student engagement and achievement (Nahid, Muzaffar & Abbas, 2023; Anas et al., 2023).

Moreover, the concept of school effectiveness is closely linked with the institution's structure and culture. It involves how plans, policies, and practices contribute to improving the school's overall objectives and teacher effectiveness at the classroom level (Mogren, Gericke & Scherp, 2019). A key aspect of this effectiveness is strong educational leadership, particularly from principals (Teig & Steinmann, 2023; Jarl, Andersson & Blossing, 2021). Their leadership

qualities, encompassing values, competencies, behaviours, and skills, are pivotal in achieving effective schools and impacting student success. These leadership qualities are also imperative in creating a structured, goal-oriented, and supportive learning environment that promotes academic excellence (Liswati, Hariyati & Uulaa, 2023). Effective principals inspire both teachers and students through visionary leadership, sound administrative skills, and the ability to cultivate a positive school culture (Huguet, 2017). When combined with favourable environmental indices such as safe, well-equipped classrooms, access to learning materials, and adequate facilities, the impact on student performance is significantly enhanced (Javornik & Mirazchyski, 2023; Teig & Steinmann, 2023).

Equally important is the motivation of teachers, which is influenced by factors such as fair compensation, recognition, opportunities for professional growth, and a conducive working condition (Chomariah, Lian & Wardiah, 2022). Research has shown that motivated teachers are more likely to be committed, innovative, and responsive to students' academic needs (Nahid et al., 2023). The synergy between strong leadership, a supportive school environment, and motivated teaching staff creates an effective learning space where students are better engaged, disciplined, and empowered to succeed academically (Nachshoni, 2024; Anas, Usman, Abdullahi, & Jalo, 2023; Johnson, 2017).

Despite an acknowledgement of the vital role of principals as educational leaders, there remains a significant knowledge gap regarding how leadership traits directly influence secondary school student success in Nigeria's context. The relationship between secondary school principals' leadership traits and student performance requires further exploration. Based on the argument that educational outcomes are not solely influenced by instructional quality but are significantly impacted by the leadership dynamics within schools (Ogunode et al., 2023), this study aims to determine whether principals' leadership attributes; such as decision-making capability, communication skills, and stakeholder engagement, can serve as reliable predictors of student achievement in secondary schools.

The general objective of the study is to investigate the effect of principals' leadership attributes, school effectiveness, and study environment on students' academic achievement in Lagos State. Specifically, the study analyzes the effect of principals' leadership attributes on the effectiveness of secondary schools; evaluates the extent to which the leadership attributes of principals affect the academic achievement of students; assesses the influence of the study environment on student academic achievement; and examines the mediating effect of teacher motivation on principal's leadership attributes and student academic achievement. The article provides answers to four (4) research questions seeking including:

- i. How do principals' leadership attributes influence the effectiveness of secondary schools in Lagos State-Nigeria?
- ii. To what extent do the leadership attributes of principals affect students' academic achievement of the secondary school students?
- iii. How does the quality of the study environment affect students' academic achievement in the selected secondary schools?
- iv. How does teacher motivation mediate between principal's leadership attributes and student academic achievement?

Research Methodology

The study adopted a survey research design and utilized a quantitative approach to gather data on the study variables. The population of the study is senior secondary school teachers in Lagos State, Nigeria. The population of schools is 322, with 8840 teachers. A multistage sampling technique was employed in the study. In the first stage, the hat-and-draw method was used to select Lagos Central from the three senatorial districts of Lagos State. In the second stage, two LGAs were selected. In the final stage, 10 senior secondary schools were randomly selected, and 15 teachers were selected per school, constituting a sample size of 150 participants. The 2024 NECO examination results in Mathematics for the selected schools were used as the academic performance of the students.

Measurement

Measure of student academic achievement (i.e., the dependent variable); determined by the mathematics subject, was obtained from the actual examination score of the senior school certificate examination conducted by the National Examination Council in Nigeria.

To measure the influence of the independent variables, the Leader Attribute Inventory (LAI), adapted from Muff, Delacoste, and Dyllick (2022), was used to assess the degree to which individuals possessed each of 37 traits on a Likert-type scale. Response options range from strongly disagree to strongly agree. The 37 leadership traits were grouped under four primary categories of educational leadership attributes: Engagement, System thinking, Leading learning, and Self-awareness. The LAI instrument is available in two forms: self-rated and observer-rated. Each item is a positive remark about a distinct trait, accompanied by a 5-point response scale indicating the degree to which the rater feels the person being rated (ratee) possesses the quality.

The second independent variable (School Effectiveness) was measured using the School Effectiveness Index (SE-Index). The SE Index is an 8-item Likert scale that gives a collective and subjective assessment of a school's overall effectiveness. Teachers were asked to describe the operation and performance of their school on a 5-point Likert scale ranging from strongly disagree to strongly agree; the higher the score, the more effective the school (Kemethofer, Helm & Warwas2022).

The third independent variable (School Environment) was measured by the Physical Environment Checklist, which defines a comprehensive strategy for improving learning environments (Bradley, 2021), while the school facility quality was quantified by the School Facilities Index (Chen, 2022).

The mediating variable (i.e., Teacher motivation) was measured by the Work Tasks Motivation Scale for Teachers (Criado-Del, Portela-Pino, Domínguez-Alonso, & Pino-Juste, 2024). The scale consists of 15 items measuring five motivational constructs: intrinsic motivation, identified regulation, introjected regulation, external regulation, and demotivation, each containing 3 items.

All adopted scales measuring the dependent and independent variables including relevant sociodemographic characteristics of the participants were adapted to achieve the purpose of

this study, and the designed questionnaire was validated, yielding a reliability value of 0.87 Cronbach's alpha.

Data analysis was carried out using descriptive statistical tools (i.e., frequency, percentage) on SPSS version 30, while inferential analyses were guided by 4 research hypotheses. Hypothesis one (H1), which states that there is a significant relationship between principals' leadership attributes and the effectiveness of secondary schools in Lagos State was tested using Pearson Product Movement Correlation. Hypothesis two (H2), which state that leadership attributes of principals significantly influence students' academic achievement in secondary schools was tested using multiple regression. Hypothesis three (H3), which stated that there is a significant effect of the school environment on students' academic achievement in secondary schools was tested using simple linear regression. Hypothesis four (H4), which stated that teacher motivation has a significant mediation effect on the principal's attributes and student's academic achievement in senior secondary schools was also tested using multiple regression.

Results

Table 1

Demographic Characteristics of Participants (n = 150)

Variables	Frequency	Percentage	Mean	Std Deviation
Gender:				
Female	52	36.8	-	-
Male	91	63.2	-	-
Educational Qualifications:				
NCE	23	15.3		
First Degree	86	57.4		
Master's Degree	29	19.4		
PhD	5	3.3		
Others	7	4.6	-	-
Participant's Age:				
Minimum	25	-		
Maximum	59	-	39.4	8.2
Participant's Experience:				
Minimum	1	-		
Maximum	34	-	12.4	7.9

Research Question 1: How does principals' leadership attributes influence the effectiveness of secondary schools in Lagos State-Nigeria?

H1: There is a significant relationship between principals' leadership attributes and the effectiveness of secondary schools in Lagos State.

The results in Table 2 indicate significant ($P < 0.05$) positive correlations between principal leadership attributes and the school effectiveness index. Engagement and Effectiveness show a correlation coefficient of 0.557 ($p < 0.05$), System Thinking and Effectiveness correlates at 0.607 ($p < 0.05$), Leading Thinking and Effectiveness correlates at 0.654 ($p < 0.05$), and Self Awareness and Effectiveness has a correlation coefficient of 0.620 ($p < 0.05$). These results show positive and moderate correlations between principal leadership attributes and school effectiveness. These results suggest that as levels of Engagement, System Thinking, Leading

Thinking, and Self-awareness increase, so does the overall School Effectiveness Index. All correlations are statistically significant at a 0.05 level of significance. Therefore, the result affirms the alternative hypothesis that a significant relationship exists between principals' leadership attributes and the effectiveness of secondary schools in Lagos State.

Table 2

Correlation Results of Principal's Leadership Attributes and School Effectiveness

S/N	Variables	1	2	3	4	5
1	Engagement	-				
2	System Thinking	.735**	-			
3	Leading Thinking	.629**	.731**	-		
4	Self-Awareness	.540**	.696**	.822**	-	
5	School Effectiveness	.557**	.607**	.654**	.620**	-

****.** Correlation is significant at 0.01 level (2-tailed).

Research Question 2: To what extent do the leadership attributes of principals affect students' academic achievement of the secondary school students?

H2: The leadership attributes of principals significantly influence students' academic achievement in Lagos State-Nigeria secondary schools.

Regression results in Table 3 indicate the influence of Leadership Attributes (Engagement, System Thinking, Leading Thinking, and Self-Awareness) on students' Academic Performance in secondary schools. The results show that Self-Awareness is the only statistically significant predictor ($p = 0.006$) of students' academic performance, with a positive coefficient of ($B = 0.404$). This suggests that higher levels of self-awareness are associated with better academic performance. Engagement ($p = 0.074$), System Thinking ($p = 0.221$), and Leading Thinking ($p = 0.385$) do not have a statistically significant influence on the academic performance of students. The overall fitness of the model is very low, as indicated by the low Adjusted R-squared value of 0.021, meaning that only 2.1% of the variance in the academic performance of students is explained by the principal's leadership attributes. Based on the result, the hypothesis that leadership attributes of principals significantly influence students' academic achievement in Lagos State-Nigeria secondary schools is rejected.

Table 3

Linear Regression Analysis of the Influence of Principal's Leadership Attributes on Students' Academic Performance

Independent V	B	Std. Error	T	Sig.
(Constant)	50.544	10.090	5.009	.000
Engagement	.340	.190	1.791	.074
System Thinking	.196	.160	1.224	.221
Leading Thinking	.058	.067	.869	.385
Self-Awareness	.404	.146	2.771	.006

Dependent Variable: Academic Performance, Adjusted R-Squared = 0.021, F-Statistic = 3.835, F-Probability = 0.004.

Research Question 3: How does the quality of the study environment affect students' academic achievement in the selected secondary schools?

H3: There is a significant effect of the study environment on students' academic achievement in Lagos secondary schools in Nigeria.

Linear regression results in Table 4 show that the school environment has a regression coefficient of 1.138, with a p-value of 0.000 less than 0.05 ($P < 0.05$). This indicates that the school environment has a significant effect on academic performance. The result implies that academic performance is expected to increase by approximately 1.138 units for each favourable unit change in the study environment. The adjusted R-squared value of 0.058 implies that only 5.8% of the variance in academic performance is explained by the environment alone. Based on this result, the alternative hypothesis is retained.

Table 4

Linear Regression Results on the Effect of Study Environment on Students' Academic Performance

Independent Variable	B	Std. Error	T	Sig.
(Constant)	35.640	3.789	9.407	.000
School Environment	1.138	.195	5.833	.000

Dependent Variable: Academic Performance, Adjusted R-Squared = 0.058, F-Statistic = 34.029, F-Probability = 0.000.

Research Question 4: How does teacher motivation mediate between principal's leadership attributes and student academic achievement?

H4: Teacher motivation has a significant mediation effect on the principal's attributes and student's academic achievement in senior secondary schools in Lagos State.

Table 5

Results of the Mediation Effect of Teacher Motivation and Principal's Attributes on Students' Academic Performance

Independent/Mediating Variables	B	Std. Error	Beta	T	Sig.
(Constant)	50.544	10.090		5.009	.000
Engagement	.340	.190	.077	1.791	.074
System Thinking	.196	.160	.052	1.224	.221
Leading Thinking	.058	.067	.037	.869	.385
Self-Awareness	.404	.146	.120	2.771	.006
(Constant)	57.345	10.313		5.560	.000
Engagement	.102	.207	.023	.492	.623
System Thinking	.203	.159	.054	1.273	.204
Leading Thinking	.063	.067	.040	.943	.346
Self-Awareness	.499	.149	.148	3.358	.001
Motivation	.318	.113	.132	2.811	.005

Dependent Variable: Academic Performance, Adjusted R-Squared is = 0.021 for model 1 and 0.033 for model 2. The F-Probabilities for both models are less than 0.05 ($P < 0.05$).

The regression results in Table 4 indicate that in Model 1 (without mediation variable), Self-Awareness is the only significant predictor of academic performance, with a positive coefficient ($B = 0.404$, $p = 0.006$), suggesting that self-awareness significantly affects students' academic performance. The effects of engagement, system thinking, and leading thinking on academic performance are not significant. In Model 2 (with mediation variable), both self-awareness ($B = 0.499$, $p = 0.001$) and motivation (mediation variable) ($B = 0.318$, $p = 0.005$) are significant predictors of students' academic performance. Other variables in the model are not significant in either model. In comparing the two regression models, Model 2 is a slightly better predictor of Academic Performance than Model 1. Model 2 has an adjusted R-

squared value (0.033 compared to 0.021) for model 1, indicating it explains slightly more variance in Academic Performance. This implies that teacher motivation has a positive mediating effect on students' academic performance.

Table 6

Summary of the Academic Performance of Students in Mathematics

Statistic	Value
Mean	57.59
Standard Deviation	10.67
Range	60
Minimum	27
Maximum	87

Source: National Examination Council (NECO), 2024

Table 6 shows the average National Examination Council mathematics score of the students in the selected schools, which is 57.59. The minimum score is 27, and the maximum is 87, with a range of 60.

Discussion of Findings

The analysis of the first hypothesis revealed a significant positive relationship between principals' leadership attributes (engagement, systems thinking, leading thinking, and self-awareness) and school effectiveness in Lagos State secondary schools. This aligns with transformational leadership theory, which emphasizes inspiring and motivating followers toward shared goals (Li, 2020). Effective school principals foster strong relationships, an inclusive culture, and professional growth, which are essential for school success (Adeoye & Akinnubi, 2020).

Also, engagement, as a key attribute, reflects principals' active involvement with staff, students, and the community, building trust and promoting collaboration (Angwaomaodoko, 2023; Yambo, 2022). This inclusive leadership enhances stakeholder motivation and performance, ultimately improving educational outcomes (Al-Husaini & Shukor, 2022; Abubakar, Abubakar & Itse, 2017; Jarl et al., 2021; Kuzminykh, Ghita, & Xiao, 2021). Systems thinking also showed a positive correlation with school effectiveness. Principals with this skill understand the interconnectivity within school systems (curriculum, teaching, resources) and implement strategies that support continuous improvement (Wang, Huang, Ying-ju, Pan, & Sheng, 2021; Garay & Reyes, 2019).

Leading thinking was another key factor, enabling principals to foster critical and creative thinking among staff and students, which encourages innovation and deeper learning engagement (Widodo et al., 2023; Cholik, 2022). Lastly, self-awareness was positively linked to a healthy school environment. Principals with high emotional intelligence are better at managing relationships, communicating effectively, and encouraging trust and collaboration, which enhances teacher morale and school effectiveness (Wiid, Cant, & Senooane, 2022; Maquieira, Tari, & Molina-Azorín, 2021).

Further findings revealed that principals' leadership attributes affect students' academic performance. Of the four attributes (self-awareness, engagement, systems thinking, and leading thinking) only self-awareness showed a significant positive impact. This indicates that

as principals' self-awareness increases, so will student academic performance. Self-awareness, which involves understanding one's emotions and their impact on others, helps principals build positive school cultures that support learning (Samimi, Cortes, Anderson, & Herrmann, 2022; Zulfikar, Rahman, & Roslina, 2021). A self-aware principal can support emotionally safe environments, which promote student engagement and achievement (Ogunode et al., 2023; Al-Oweidi & Freihat, 2020).

Other leadership attributes including engagement, systems thinking, and leading thinking did not show significant direct effects. However, their positive coefficients suggest potential for future influence. For instance, engagement builds trust and collaboration (Al-Husaini & Shukor, 2022), systems thinking enables holistic school improvement (Wang et al., 2021), and leading thinking encourage innovation and critical thinking aligned with 21st-century skills (Khuluqo & Cholikh, 2022). While these attributes may not currently impact student performance directly, enhancing them could lead to long-term academic gains.

The study further found that a one-unit improvement in the study environment leads to a 1.138-unit increase in academic performance. This confirms the positive impact of the study environment on academic performance. The finding aligns with Okoi, Okoi, & Eteng (2022), who emphasize the role of a conducive learning environment in supporting academic success. However, the result indicates that while the environment is important, it accounts for only 5.8% of the variance in performance, suggesting other contributing factors.

A positive study environment includes physical aspects such as classroom layout, lighting, cleanliness, and school safety (Okoi et al, 2022; Edgerton & McKechnie, 2023). Classrooms that are well-lit, comfortable, and encourage interaction enhanced focus, collaboration, and engagement (Wang et al., 2021; Amrullah et al., 2020). In addition, inclusive and supportive classroom cultures promote student well-being and academic involvement (Al-Oweidi & Freihat, 2020).

Lastly, the findings revealed that teachers' motivation mediates the relationship between principal attributes and students' academic achievement in Lagos senior secondary schools. Two regression models were used. In Model 1 (without mediation), only self-awareness significantly predicted academic performance, highlighting the role of emotionally intelligent leadership in promoting learning (Samimi et al., 2022). Other principal attributes (engagement, systems thinking, and leading thinking) were not significant but showed potential for future influence.

Model 2 included teacher motivation as a mediator. Here, both self-awareness and teacher motivation were significant, confirming that teacher motivation mediates the effect of principal self-awareness on academic outcomes. Motivated teachers are more engaged and effective, positively impacting student performance (Johnson, 2017; Nachshoni, 2024).

These findings align with research suggesting that self-aware principals foster teacher motivation, which in turn enhances student learning (Antoci & Ceobanu, 2022; Mohamed, 2023). Effective leadership practices such as professional development, recognition, and supportive school culture, boost teacher motivation (Nachshoni, 2024; Nahid et al., 2023),

emphasizing the significant role of leadership in shaping academic outcomes (Chomariah et al., 2022; Meyer et al., 2022).

Conclusion and Recommendation

This study concludes that principal leadership attributes, especially self-awareness, play a vital role in fostering a positive learning environment and improving student academic performance, with teacher motivation serving as a key mediator in this relationship. Although other leadership traits like engagement, systems thinking, and leading thinking did not show direct effects, they remain important for future development. A supportive study environment also significantly influences academic outcomes, highlighting the need for safe, well-resourced, and engaging school settings. The findings align with transformational leadership theory, underscoring the impact of visionary, inclusive, and system-oriented leadership on school effectiveness and student success.

Therefore, the study recommended that to enhance educational effectiveness, policymakers and education management should prioritize professional development programs focused on enhancing principal self-awareness and leadership skills. Also, creating supportive and motivating work environments for teachers can significantly impact their effectiveness in the classroom, ultimately benefiting student performance outcomes.

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