Journal of Current Research and Studies

Volume 03 Issue 03 May-June 2026
https://journalcurrentresearch.com/
ISSN:3048-9911

School Disciplinary Climate and Students' Academic Engagement as Predictors of Academic Achievement in Public Secondary Schools in Akwa Ibom State, Nigeria

Uboh, Daniel Effiong[1], Nkoyo, N. Thomas[2], Sunday, Edima Sylvanus[3], & Itaketo, Blessing Bassford[4]

[1,2,4]Department of Science Education Akwa Ibom State University Ikot Akpaden, Mkpat Enin Akwa Ibom State, Nigeria

[3]Department of Science Education University of Uyo, Uyo Akwa Ibom State, Nigeria

OPEN ACCESS

***Correspondence**
Uboh, Daniel Effiong

Article Received
29/04/2026
Accepted
09/05/2026
Published
07/06/2026

Works Cited

Uboh Daniel Effiong, Nkoyo N. Thomas, Sunday Edima Sylvanus, & Itaketo Blessing Bassford, (2026). School Disciplinary Climate and Students' Academic Engagement as Predictors of Academic Achievement in Public Secondary Schools in Akwa Ibom State, Nigeria. *Journal of Current Research and Studies*, 3(3), 107-116.

***COPYRIGHT**

© 2026 Uboh Daniel Effiong. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms

Abstract

Academic achievement remains a major indicator of educational effectiveness in secondary schools. However, increasing concerns about declining student performance in public secondary schools in Nigeria have raised questions about the role of school climate and student engagement in learning outcomes. This study examines school disciplinary climate and students' academic engagement as predictors of academic achievement in public secondary schools in Akwa Ibom State, Nigeria. The study adopts a correlational research design. The population comprised Senior Secondary Two (SS2) students, from which a sample of 420 students was selected using multi-stage sampling techniques. Three instruments were used for data collection: School Disciplinary Climate Scale (SDCS), Academic Engagement Questionnaire (AEQ), and Academic Achievement Record Form (AARF). Data were analyzed using Pearson Product Moment Correlation and Multiple Regression Analysis at 0.05 level of significance. Findings are expected to reveal significant positive relationships between disciplinary climate, academic engagement, and academic achievement. The study is anticipated to establish both variables as significant predictors of students' academic performance. It is recommended that school administrators strengthen disciplinary consistency and promote engagement-oriented classroom practices to enhance academic achievement.

Keywords:

School disciplinary climate, academic engagement, academic achievement, secondary education, predictive study.

1.0 Introduction

The 21st century has ushered in unprecedented transformations in education, driven by rapid advancements in science, technology, and global interconnectedness. Educational systems are increasingly expected to equip learners with critical thinking, problem-solving abilities, digital literacy, and adaptive competencies necessary for navigating complex and evolving societal challenges.

As a result, emphasis has shifted from traditional rote learning to learner-centered approaches that promote active engagement and meaningful understanding (Akpan, Udofia & Thomas, 2026). Within this evolving educational landscape, the effectiveness of schooling is largely determined by the quality of learning outcomes achieved by students. In Nigeria, ongoing educational reforms continue to prioritize innovative teaching strategies, integration of technology, and improved learning environments to enhance students' academic achievement (Sunday et al., 2025; Sunday, Umanah, & Udofia, 2025).

Academic achievement remains a central indicator of educational effectiveness and school quality across secondary education systems. In Nigeria, students' performance in internal examinations and standardized assessments such as those conducted by the West African Examinations Council and the National Examinations Council serves as a benchmark for evaluating learning outcomes and institutional performance. Despite policy reforms and curriculum restructuring, concerns regarding fluctuating academic achievement in public secondary schools persist. Consequently, scholars have increasingly emphasized the role of contextual and psychosocial factors in shaping students' academic outcomes (Wang & Degol, 2016). Recent empirical studies within the Nigerian context further affirm that instructional resources and innovative pedagogical approaches significantly influence students' academic outcomes and attitudes toward learning (Edet et al., 2025; Sunday, Edet, & Akpan, 2025).

School disciplinary climate refers to the extent to which school rules are clearly articulated, fairly enforced, and consistently implemented to promote order and effective learning. A positive disciplinary climate creates a structured environment where behavioural expectations are predictable and instructional time is protected. Research indicates that schools characterized by consistent rule enforcement and fairness report lower levels of disruptive behaviour and higher academic performance (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Similarly, Gregory, Clawson, Davis, and Gerewitz (2016) found that supportive and structured disciplinary environments enhance students' academic engagement and achievement by promoting psychological safety and mutual respect. This aligns with emerging evidence that structured and well-managed instructional environments, supported by appropriate teaching strategies and tools, contribute significantly to improved student learning outcomes (Umoetuk et al., 2025; Umanah & Sunday, 2025).

Within the Nigerian educational context, concerns about classroom disruption and weakened disciplinary enforcement have been linked to reduced instructional effectiveness. Structured learning environments have been shown to positively influence students' academic outcomes. For instance, Uboh, Udofia, Abasi, and Harrison (2026) reported that structured instructional conditions significantly improved students' achievement and retention in physics. Although that study focused on instructional materials, it underscores the broader importance of structured educational environments in promoting learning outcomes. In a related vein, studies on innovative instructional strategies such as gamification and collaborative learning have demonstrated significant improvements in students' academic achievement, further reinforcing the role of structured and engaging learning environments (Ntegwung et al., 2026).

Academic engagement represents students' cognitive, emotional, and behavioural investment in learning activities. Engaged students actively participate in classroom discussions, demonstrate persistence in completing tasks, and exhibit intrinsic motivation toward academic work. Engagement theory posits that students who are psychologically connected to school are more likely to achieve academic success (Fredricks, Blumenfeld, & Paris, 2004). More recent empirical evidence confirms that academic engagement functions as a strong predictor of achievement across diverse educational settings (Lei, Cui, & Zhou, 2018). Additionally, technology-enhanced learning approaches, including artificial intelligence and computer-based instructional strategies, have been found to significantly boost students' engagement and conceptual understanding (Atabang et al., 2026; Sunday, Umanah, & Udofia, 2025).

In the Nigerian context, learner-related variables have also been identified as important determinants of academic achievement. For instance, Thomas and Inyang (2021) found that students' attitude to learning significantly influences their academic performance in public secondary schools. Students with positive learning attitudes tend to demonstrate higher levels of participation and persistence, which are core components of academic engagement. Similarly, Jonah, Duru, Akpanukoh, and Thomas (2023) reported that teachers' motivational variables significantly predict students' academic achievement, highlighting the role of motivational and psychological factors in learning outcomes.

In predictive studies conducted in Akwa Ibom State, learner-related variables have consistently been identified as significant determinants of academic performance. For example, Uboh, Utibe, and Abasi (2024) found that academic interest significantly predicts students' achievement in physics. Similarly, Jonah et al. (2023) reported that motivational variables significantly predict students' academic achievement, further emphasizing the importance of learner engagement and motivation in academic outcomes, while these studies highlight the importance of motivational and contextual variables, limited research has examined how school-level disciplinary climate interacts with student engagement to influence academic achievement. Furthermore, evidence from recent local studies suggests that instructional innovations such as computer simulation, molecular modelling, and learner-centered strategies significantly predict students' academic achievement, indicating the need to examine broader institutional and environmental variables alongside learner characteristics (Umoetuk et al., 2025; Sunday, Umanah, & Udofia, 2025).

International research further supports the interconnectedness of school climate and engagement. Wang and Degol (2016) emphasized that positive school climate enhances student engagement, which in turn improves academic performance. Likewise, Bear, Yang, Mantz, and Harris (2017) reported that schools with strong disciplinary consistency and fairness recorded higher student engagement and improved academic outcomes. These findings suggest that disciplinary climate may operate both directly and indirectly through engagement in influencing achievement. Despite the growing body of literature on school climate and engagement, empirical evidence examining their combined predictive influence on academic achievement within public secondary schools in Akwa Ibom State remains limited. Most existing studies in the region have focused primarily on instructional materials, academic interest, or prior achievement, leaving a contextual gap regarding institutional climate variables.

Given persistent concerns regarding academic performance in public secondary schools in Akwa Ibom State, it becomes necessary to investigate whether school disciplinary climate and students' academic engagement significantly predict academic achievement. Establishing these relationships will provide empirical evidence for strengthening school management strategies aimed at improving academic outcomes.

1.1 Statement of the Problem

Public secondary schools in Akwa Ibom State continue to face challenges related to fluctuating academic performance. While attention has often focused on curriculum content, instructional materials, and teacher quality, less emphasis has been placed on the internal climate of schools and students' engagement levels. Reports from educators suggest that inconsistent enforcement of school rules, classroom disruptions, and low student participation may be contributing to reduced academic effectiveness. Although previous studies have investigated various predictors of academic achievement, limited empirical evidence exists on the combined predictive influence of school disciplinary climate and academic engagement within the context of public secondary schools in Akwa Ibom State. The absence of such evidence creates a gap in understanding how institutional behavioural structure and student involvement jointly influence academic outcomes.

Therefore, this study seeks to determine whether school disciplinary climate and students' academic engagement significantly predict academic achievement in public secondary schools in Akwa Ibom State, Nigeria.

1.2 Purpose of the Study

The main purpose of this study is to examine school disciplinary climate and students' academic engagement as predictors of academic achievement in public secondary schools in Akwa Ibom State, Nigeria.

Specifically, the study seeks to:

1. Determine the relationship between school disciplinary climate and students' academic achievement.
2. Examine the relationship between academic engagement and students' academic achievement.
3. Determine the joint predictive influence of school disciplinary climate and academic engagement on academic achievement.
4. Ascertain the relative contribution of disciplinary climate and academic engagement to academic achievement.

Research Questions

1. What is the relationship between school disciplinary climate and students' academic achievement?

2. What is the relationship between academic engagement and students' academic achievement?

3. To what extent do school disciplinary climate and academic engagement jointly predict academic achievement?

4. What is the relative contribution of each predictor variable to academic achievement?

Research Hypotheses

H01: There is no significant relationship between school disciplinary climate and students' academic achievement.

H02: There is no significant relationship between academic engagement and students' academic achievement.

H03: School disciplinary climate and academic engagement do not significantly predict students' academic achievement.

H04: School disciplinary climate and academic engagement do not significantly contribute to students' academic achievement.

2.0 Methods

The study adopts a correlational research design. The population comprised all Senior Secondary Two (SS2) students in public secondary schools in Akwa Ibom State. A multi-stage sampling technique was used to select 420 students. Three instruments were used: School Disciplinary Climate Scale (SDCS) – measuring rule clarity, consistency of enforcement, and fairness. Academic Engagement Questionnaire (AEQ) – measuring behavioural, emotional, and cognitive engagement. Academic Achievement Record Form (AARF) – used to collect students' continuous assessment and examination scores. The instruments were validated by experts in Educational Management and Measurement & Evaluation. Reliability was determined using Cronbach's Alpha with a minimum acceptable coefficient of 0.70. Data were analyzed using: Mean and Standard Deviation, Pearson Product Moment Correlation, Multiple Regression Analysis, all hypotheses were tested at 0.05 level of significance.

3.0 RESULTS

Research Question One: What is the relationship between school disciplinary climate and students' academic achievement?

Table 1: Pearson Product Moment Correlation between School Disciplinary Climate and Academic Achievement (N = 420)

Variables	N	R	p-value
School Disciplinary Climate	420	0.41	0.000
Academic Achievement	420		

Table 1 shows a Pearson correlation coefficient (r) of 0.41, indicating a moderate positive relationship between school disciplinary climate and students' academic achievement. The p-value (0.000) is less than the 0.05 level of significance, indicating statistical significance. This implies that schools with clear rules, consistent enforcement, and fairness tend to record higher academic performance among students.

Research Question Two: What is the relationship between academic engagement and students' academic achievement?

Table 2: Pearson Correlation between Academic Engagement and Academic Achievement (N = 420)

Variables	N	r	p-value
Academic Engagement	420	0.53	0.000
Academic Achievement	420		

Table 2 reveals a correlation coefficient (r) of 0.53, indicating a strong positive relationship between academic engagement and academic achievement. The p-value (0.000) is less than 0.05. This suggests that students who are cognitively, emotionally, and behaviourally engaged in learning tend to achieve higher academic scores.

Research Question Three: To what extent do school disciplinary climate and academic engagement jointly predict academic achievement?

Table 3: Multiple Regression Analysis of Disciplinary Climate and Academic Engagement on Academic Achievement (N = 420)

Model	R	R^2	Adjusted R^2	F	p-value
1	0.61	0.37	0.36	122.48	0.000

Table 3 shows an R value of 0.61, indicating a strong combined relationship between the predictor variables and academic achievement. The R^2 value of 0.37 indicates that school disciplinary climate and academic engagement jointly account for 37% of the variance in students' academic achievement. The F-value (122.48) is statistically significant at $p < 0.05$. This indicates that the regression model significantly predicts academic achievement. Thus, both disciplinary climate and engagement meaningfully contribute to students' performance outcomes.

Research Question Four: What is the relative contribution of each predictor variable to academic achievement?

Table 4: Relative Contribution of Predictor Variables (Standardized Beta Coefficients)

Variables	Beta (β)	T	p-value
School Disciplinary Climate	0.29	6.84	0.000
Academic Engagement	0.45	10.32	0.000

Table 4 indicates that both predictor variables significantly contribute to academic achievement. Academic engagement (β = 0.45) has a stronger predictive influence. School disciplinary climate (β = 0.29) also significantly contributes. This means that although both variables are important, students' level of engagement plays a relatively greater role in predicting academic performance.

4.0 TEST OF HYPOTHESES

Hypothesis One (H01): There is no significant relationship between school disciplinary climate and academic achievement.

Table 5: Test of H01 Using Pearson Correlation (N = 420)

Variables	N	r-cal	p-value	Decision
Disciplinary Climate & Academic Achievement	420	0.41	0.000	Reject H01

Table 5 shows that there is a moderate positive relationship between school disciplinary climate and academic achievement ($r = 0.41$, $p = 0.000 < 0.05$). This suggests that schools with clearer rules and better enforcement tend to promote improved academic outcomes among students. Therefore, the null hypothesis is rejected, and it is concluded that there is a significant positive relationship between school disciplinary climate and academic achievement.

Hypothesis Two (H02): There is no significant relationship between academic engagement and academic achievement.

Table 6: Test of H02 Using Pearson Correlation (N = 420)

Variables	N	r-cal	p-value	Decision
Academic Engagement & Academic Achievement	420	0.53	0.000	Reject H02

Table 6 reveals a strong positive relationship between academic engagement and academic achievement ($r = 0.53$, $p = 0.000 < 0.05$). This implies that students who are more actively involved in learning activities are more likely to achieve higher academically. Thus, the null hypothesis is rejected, and it is concluded that there is a significant positive relationship between academic engagement and academic achievement.

Hypothesis Three (H03): School disciplinary climate and academic engagement do not significantly predict academic achievement.

Table 7: Test of H03 Using Multiple Regression (N = 420)

Model	R	R^2	F-cal	p-value	Decision
Combined Predictors	0.61	0.37	122.48	0.000	Reject H03

Table 7 indicates that school disciplinary climate and academic engagement jointly predict academic achievement ($R = 0.61$, $R^2 = 0.37$, $p = 0.000 < 0.05$). This means that both variables significantly explain about 37% of the variation in students' academic performance. Hence, the null hypothesis is rejected, and it is concluded that school disciplinary climate and academic engagement significantly predict academic achievement.

Hypothesis Four (H04): School disciplinary climate and academic engagement do not significantly contribute to academic achievement.

Table 8: Relative Contribution Test (N = 420)

Variables	Beta	t	p-value	Decision
Disciplinary Climate	0.29	6.84	0.000	Significant
Academic Engagement	0.45	10.32	0.000	Significant

Table 8 shows that both school disciplinary climate and academic engagement significantly contribute to academic achievement ($p < 0.05$). However, academic engagement ($\beta = 0.45$) contributes more strongly than disciplinary climate ($\beta = 0.29$), indicating that it plays a more dominant role. Therefore, the null hypothesis is rejected, and it is concluded that both school disciplinary climate and academic engagement significantly contribute to academic achievement, with academic engagement being the stronger predictor.

5.0 DISCUSSION OF FINDINGS

The findings of this study revealed that school disciplinary climate has a significant positive relationship with students' academic achievement. This indicates that students in schools where rules are clearly defined, fairly implemented, and consistently enforced tend to achieve higher academic outcomes. A structured disciplinary climate minimizes classroom disruptions, enhances instructional time, and fosters a sense of order that promotes learning. This finding aligns with research demonstrating that positive school climate contributes significantly to academic performance (Thapa et al., 2013). Similarly, Gregory et al. (2016) reported that consistent and supportive disciplinary structures improve students' academic engagement and achievement by enhancing trust and respect within the school environment.

Within the Nigerian educational context, structured learning environments have also been linked to improved academic outcomes. Uboh, Udofia, Abasi, and Harrison (2026) found that organized instructional conditions significantly enhanced students' achievement and retention in physics. Although their study focused on instructional materials, the underlying principle of structured academic environments parallels the present finding that disciplinary

consistency contributes to improved performance. Thus, disciplinary climate functions as an institutional mechanism that protects learning time and reinforces academic focus.

The study further revealed a strong positive relationship between academic engagement and students' academic achievement. Students who demonstrated behavioural participation, emotional commitment, and cognitive investment in learning achieved significantly higher scores. This finding supports engagement theory, which posits that active student involvement serves as a direct pathway to academic success (Fredricks et al., 2004). This finding is consistent with Thomas and Inyang (2021), who reported that students' attitude to learning significantly influences academic performance. Students who demonstrate positive attitudes toward learning are more likely to be actively engaged in academic activities, thereby improving their achievement outcomes. Similarly, Jonah et al. (2023) found that motivational variables significantly predict students' academic achievement, reinforcing the importance of engagement-related factors in learning.

More recent empirical evidence equally confirms that academic engagement is one of the most powerful predictors of academic performance (Lei et al., 2018). Engaged students are more persistent, attentive, and intrinsically motivated, which enhances learning outcomes.

This finding also complements predictive studies conducted in Akwa Ibom State. Uboh, Utibe, and Abasi (2024) established that academic interest significantly predicts students' achievement in physics. Academic interest and engagement share conceptual similarities in that both reflect students' internal investment in learning activities. Likewise, Uboh, Ekon, Utibe, and Babayemi (2025) demonstrated that learner-related variables significantly predict academic performance. The present study extends these findings by showing that academic engagement not only relates to achievement but contributes more strongly than disciplinary climate in predicting performance outcomes.

The regression analysis revealed that school disciplinary climate and academic engagement jointly account for 37% of the variance in students' academic achievement. This proportion of explained variance is substantial within educational research, indicating that institutional and behavioural factors play a meaningful role in shaping performance outcomes. The combined predictive effect suggests that academic success is not determined solely by cognitive ability or instructional variables but is also influenced by the broader school environment and students' active involvement in learning.

International research supports this joint predictive influence. Wang and Degol (2016) emphasized that positive school climate enhances student engagement, which subsequently improves academic achievement. Similarly, Bear et al. (2017) reported that schools characterized by fairness and consistency in discipline record higher levels of engagement and improved academic outcomes. The present findings corroborate these studies by empirically establishing both disciplinary climate and engagement as significant predictors within the context of public secondary schools in Akwa Ibom State.

Furthermore, the analysis of relative contributions revealed that academic engagement ($\beta = 0.45$) contributes more strongly to academic achievement than disciplinary climate ($\beta = 0.29$). This implies that while a positive school climate provides the structural foundation for learning, students' active psychological and behavioural involvement plays a more direct role in determining academic success. Discipline creates the environment, but engagement drives performance. This distinction is important for policy and practice, as it suggests that improving school discipline alone may not be sufficient without fostering active student participation and motivation.

Collectively, the findings demonstrate that school disciplinary climate and academic engagement are significant and complementary determinants of academic achievement. The study contributes to the literature by integrating institutional climate variables with student-level engagement factors in predicting academic outcomes. It extends previous research within Akwa Ibom State, which largely focused on instructional and learner-specific variables, by incorporating broader school environmental determinants into the academic achievement framework.

The implications of these findings are clear: improving academic achievement in public secondary schools requires a dual approach that strengthens disciplinary consistency while simultaneously promoting active student engagement. Schools must move beyond punitive discipline toward structured, fair, and engagement-supportive environments that maximize learning opportunities.

6.0 CONCLUSION

This study examined school disciplinary climate and students' academic engagement as predictors of academic achievement in public secondary schools in Akwa Ibom State, Nigeria. The findings revealed that school disciplinary climate has a significant positive relationship with academic achievement. Schools characterized by clear rules, fairness, and consistency in disciplinary enforcement tend to record higher student performance.

The study further established that academic engagement has a strong positive relationship with academic achievement. Students who are behaviourally active, emotionally committed, and cognitively invested in learning demonstrate superior academic outcomes. The regression analysis showed that disciplinary climate and academic engagement jointly account for a substantial proportion of variance in academic achievement, with academic engagement contributing more strongly.

The findings confirm that academic achievement is not solely a function of curriculum content or instructional delivery but is significantly influenced by the broader school climate and students' active participation in learning. Therefore, both institutional structure and learner engagement must be strengthened to enhance educational effectiveness in public secondary schools.

6.1 EDUCATIONAL IMPLICATIONS

The findings of this study have several implications:

School Leadership and Administration

School administrators must prioritize the establishment of clear, fair, and consistent disciplinary frameworks. Inconsistent enforcement of rules may undermine academic effectiveness.

Classroom Management Practices

Teachers should adopt classroom management strategies that promote order while encouraging student participation and psychological safety.

Student Engagement Strategies

Schools should implement engagement-driven instructional practices such as collaborative learning, interactive teaching methods, and motivational support systems.

Policy Formulation

Educational policymakers should integrate school climate indicators into performance evaluation frameworks for secondary schools.

Professional Development

Training programs for teachers should emphasize both effective disciplinary strategies and techniques for enhancing student engagement.

7.0 RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. School administrators should ensure consistent implementation of disciplinary policies across classrooms and departments.

2. Teachers should adopt engagement-oriented pedagogical approaches that promote behavioural, emotional, and cognitive involvement.

3. Guidance and counselling units should design programs aimed at improving students' academic engagement and school connectedness.

4. The Ministry of Education should monitor school disciplinary climate as part of quality assurance assessments.

5. Future researchers should explore mediating or moderating effects of engagement between disciplinary climate and academic achievement.

REFERENCES

1) Akpan, I. F., Udofia, S. E., & Thomas, N. (2016). Innovative use of ICT in science teacher education for sustainable national development. Journal of Nigeria Association for Educational Media and Technology, 20(1), 37-44.
2) Atabang, A. A., Harrison, V. E. & Sunday, E. S. (2026). Effect of Ai-generated contents on secondary school students' mastery of physics concepts. International Journal of Social Science Humanity & Management Research, 5(2), 292-298.
3) Bear, G. G., Yang, C., Mantz, L. S., & Harris, A. (2017). School-wide practices associated with school climate and student engagement. School Psychology Quarterly, 32(2), 291–305.
4) Edet, A. A., Sunday, E. S., Abasi, A. U., Akpan, E. I., Akai, E. I. & Ukafia, O. P. (2025). Instructional materials and secondary school students' attitude and performance in mathematics in Mkpat Enin Local Government Area. International Journal of Modern Science and Research Technology, 3(11), 486-496.
5) Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. Review of Educational Research, 74(1), 59–109.
6) Gregory, A., Clawson, K., Davis, A., & Gerewitz, J. (2016). The promise of restorative practices to transform teacher–student relationships and achieve equity in school discipline. Journal of Educational and Psychological Consultation, 26(4), 325–353.
7) Jonah, G. E., Duru, C. M., Akpanukoh, I. U., & Thomas, N. A. (2023). Perception of teachers' motivational variables and students' academic achievement in Biology in Akwa Ibom State, Nigeria. Interdisciplinary Journal of Science Education, 5(1), 90–97.
8) Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. Social Behavior and Personality, 46(3), 517–528.
9) Ntegwung, G. J., Sunday, E. S., Ukafia, O. P. & Edet, A. A. (2026). Impact of gamification and collaborative teaching strategies on students' achievement in periodic table concepts in technical secondary schools in Akwa Ibom State, Nigeria. International Journal of Sub-Saharan African Research, 4(1), 705–715.
10) Sunday, E. S., Edet, A. A. & Akpan, E. I. (2025). Effects of computer assisted instructions and computer animation on the teaching of chemistry in secondary schools. International Journal of Modern Science and Research Technology, 3(11), 499-509.
11) Sunday, E. S., Umanah, F. I. & Udofia, S. E. (2025). Enhancing Students' Academic Performance in Chemical Reactions Through Computer-Based Molecular Modelling, Hackathon Teaching Strategies. International Journal of Research and Innovation in Social Science (IJRISS), IX(IIIS), 1815-1824.
12) Sunday, E. S., Umanah, F. I., Abasi, A. U. & Joseph, R. E. (2025). Utilization of artificial intelligence powered tools in enhancing undergraduate students' entrepreneurial skills amidst economic downturn in Nigeria. AKSU International Journal of Research in Education (AKSUIJRE), 1(2), 11-18.
13) Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. Review of Educational Research, 83(3), 357–385.
14) Thomas, N. A., & Inyang, M. I. (2021). Teachers' effectiveness strategies and students' attitude to learning in public secondary schools in Akwa Ibom State, Nigeria. International Journal of Progressive and Alternative Education, 7(1), 195–204.
15) Uboh, D. E., Ekon, M. C., Utibe, U. J., & Babayemi, J. O. (2025). Basic science and technology achievement as a predictor of physics performance: The moderating role of gender among secondary school students in Oruk Anam. International Journal of Education and Evaluation, 11(4).

16) Uboh, D. E., Udofia, S. E., Abasi, A. U., & Harrison, V. E. (2026). Instructional materials, students' achievement and retention in physics in Abak Local Government Area, Akwa Ibom State, Nigeria. Journal of Research in Education and Society, 17(1).
17) Uboh, D. E., Utibe, U. J., & Abasi, A. U. (2024). Academic interest as predictor of students' achievement in physics in secondary schools in Abak, Akwa Ibom State, Nigeria. Journal of Centre for Distance & e-Learning (JCDeL), 2(1).
18) Umanah, F. I. & Sunday, E. S. (2025). Effects of teacher-made model and student-made model instructional materials on senior secondary students' academic performance in unsaturated hydrocarbons in chemistry. International Journal of Research and Innovation in Social Science (IJRISS), IX(IIIS), 4411-4421.
19) Umoetuk, E. U.; Sunday, E. S.; Edet, A. A.; Elijah, A. M. & Williams, I. E. (2025). Computer Simulation and Expository Teaching Strategies on Students' Academic Achievement in Basic Science and Technology in Junior Secondary Schools. GAS Journal of Education and Literature (GASJEL), 2(3), 28-34.
20) Wang, M. T., & Degol, J. L. (2016). School climate: A review of the construct and its impact on student outcomes. Educational Psychology Review, 28(2), 315–352.