AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

SCHOOL CLIMATE AS DETERMINANT OF ACADEMIC ACHIEVEMENT IN MATHEMATICS AMONG PUBLIC SENIOR SECONDARY SCHOOL STUDENTS IN LAGOS STATE

Professor Senimetu Esther Ileuma
Department of Art &Social Science Education,
Faculty of Education, Lead City University, Ibadan, Oyo State
ileumaesther@gmail.com
&
Mary Olubunmi Adebayo
Department of Art &Social Science Education, Faculty of Education, Lead City University, Ibadan, Oyo State
maryolubunmiadebayo@gmail.com

ABSTRACT

This study focused on School Climate as Determinant of Academic Achievement in Mathematics among Public Senior Secondary School Students in Lagos State. It was conducted to investigate the problem of student achievement in Mathematics. It achieved the following objectives: perceived status of school climate on academic achievement among Lagos state public senior secondary schools; level of academic achievement in Mathematics in public secondary schools, Lagos State. The study used a descriptive survey design as a methodology. The questionnaire and test were the instruments for the study. It used selected senior secondary schools from four educational districts in Lagos state. The population of senior secondary school students was 285,536. The sample obtained for the study was one thousand (1,000). The study adopted a systematic random sampling technique. Guttman-split half method was used to estimate the reliability of instruments. Reliability values of the questionnaire and achievement test were .709 and .718. The findings revealed that public senior secondary schools in Lagos State took student safety as utmost priority with the weighted mean of 3.16; cordial relationship between the students and teachers in public senior secondary schools of Lagos state helped students' academic achievement with the weighted mean of 3.45; parents do participate in the learning of the public senior secondary school students in Lagos state. It was recommended that public senior secondary school should continuously uphold safety as one of its priorities; students should be encouraged to develop interest in Mathematics by the school because it is a core subject and government should support the school by providing adequate safety measures.

Keywords: School Climate, Academic Achievement, Mathematics

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

Introduction

Researcher observed that, Mathematics seems to pose difficulty to students in Secondary School possibly because of its technicality and concentration needed for it. Thus, the difficulty in understanding it affects students' interest and achieving good grades. Hence, Academic achievement is any identifiable success in a scholastic or disciplined study (Bhat and Bhardwaj 2014, 93). It is also a description of academic outcomes that indicates the extent to which a student has achieved his or her learning goal (Akanni 2021, 5). Thus, academic achievement does measure student grade in courses or subjects and grade point average (GPA) to discover the extent of the success or failure of a student in any subject. Hence, academic achievement mirrors one's intellectual ability and it is important to a student's life if he or she will attain higher degree or certificate. In other term, academic achievement is the product of student's interaction with his environment such as school, teachers and peers. Moreso, a student concept of academic achievement could be based on people's judgement of him in terms of academic prowess, relationship with others, time spent on social activities which possibly determines how sociable he becomes.

On the other hand, Mathematics comes from ancient Greek word, mathema which means 'that which is learnt;' it has various branches in science and those branches require numbers, algebra and geometric forms. Moreover, Mathematics is a core subject recommended by the National Policy on Education in Nigeria to be offered by pupils from pre – primary to post primary education (Nyoni, Nyoni and Bonka 2017, 5). In fact, it is 'lessee passe' for tertiary institution's admission. It seems to be compulsory because it is utilized by virtually everybody in day-to-today transactions such as Banking, Commerce (buying and selling), Engineering, Sciences, Construction and so on (Mohammad, Atchia and Chinapah 2019, 3). This seems to be so because, the aforementioned are involved in any of the mathematics components such as counting, analysing, communicating information and ideas to solve life challenges and others of its effectiveness.

Nevertheless, the importance placed on Mathematics by Nigerian Ministry of Education and International body on Education negates students' attitude towards it. The abysmal attitudinal disposition towards mathematics is displayed in students' interest and achievement at different levels of education which emerges from poor study habit as discovered by early research. Also, some students find Mathematics difficult to relate with, because they could not integrate its learning to real life experience unlike Economics, Commerce, Government and other subjects. It thus becomes a nightmare to some students, reason being that it needs frequent practice to master the concept (Mohammad, Atchia and Chinapah 2019, 4).

Furthermore, a factor that seems to determine the excellent or failure of students in Mathematics is School Climate. It is "the quality and character of school life which includes norms, values, interpersonal relationships, social

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

interactions, organizational processes and structures" (Bhat and Bhardwaj 2014, 242). The definition portrays a standard that is upheld in the school environment that promote morality, good values, better relationships cum interactions (among the teachers, students, management, staff and parents) and the system of governing the school. Thus, School climate seems to affect the academic achievement of students in a great deal in the sense that, it encompasses students physical, academic, social and emotional life. It is a quality of school life that might lead a student to love or hate the school, subjects and possibly teachers he comes across in each subject. Thus, school climate in this study will be based on these indices – Safety in the school environment, Student – Teacher relationship, Teacher – Parent relationship and Discipline in the school environment. In a nutshell, school climate is likened to a life wire of academic achievement. Hence, this study is borne out of concern of senior secondary school students' low academic achievement in Mathematics and contributing to the existing knowledge from the aspect of School Climate

Statement of the Problem

Low academic achievement problem in Mathematics seems to be a thorn in the
flesh of educational stake holders of senior secondary schools in Nigeria. The menace of poor achievement is not paramount to public schools alone but private schools are inclusive. Few of the similar causes of this menace is students' disinterest and attitude towards mathematics. Moreover, other indices that affect student low achievement in Mathematics could be linked to shortage of qualified mathematics teachers; lack of facilities; equipment and instructional materials for effectiveness; pupils-to-teachers-ratio; parent literacy level; inconducive school climate and so on (Lefkowitz 2018, 1). Thus, the simile low academic achievement of students in Mathematics hinders some of them from pursuing their dream courses in the tertiary institution, some are discouraged and eventually settle for vocational training while some toll the path of hooliganism in the society. Hence, this study seeks to proffer solution to the problem of student's low academic achievement in Mathematics through school climate.

Aim and Objectives of Study

This study aims at investigating School Climate as Determinant for academic achievement in Mathematics among Public Senior secondary school students in Lagos State; hence, objectives are to -

1. identify perceived status of school climate in the public senior secondary school, Lagos State.
2. identify the level of academic achievement in Mathematics in public secondary school, Lagos State.

Research Questions

1. What is the perceived status of school climate in the public senior secondary schools of Lagos State?
2. What is the level of academic achievement in Mathematics among public senior secondary school students in Lagos state?

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

Conceptual Framework

Academic Achievement

This term has been defined by various authors in different ways based on their views. A scholar defines it as knowledge achieved or skills acquired through the school subjects, typically determined by the test marks assigned by the teachers. Also, another scholar views academic achievement as the level of attainment or proficiency in academic work as evaluated by the teachers, by standardized tests or by combination of both. To someone else, it is the product of interaction between the student and his environment, namely- school, teachers and peers (Bhat and Bhardwaj 2014, 93). Thus, these definitions imply that, academic achievement is linked with acquisition of knowledge, skills, evaluation of students through test or examination which brings academic attainment. Though a scholar combined his view in his definition in the sense that, he presents academic achievement as students' interaction with his environment; yet, he still in consonant with other scholars' views about the subject matter. Besides, academic achievement behoves the student an opportunity to become aware of people's rating of him and his rating of self in relation to others. Hence, it is the outcome of students learning of a school curriculum.

Mathematics

The knowledge of mathematics is an essential component in most field of learning and useful for the society build up. It is a tool that is useful to solve human daily life difficulty. Mathematics is derived from the Greek word mathema, which signifies – 'that which is learnt', Invariably, it means learning. In the Hebrew word it means 'thinking' (Sakirudeen and Sanni 2017,1). The etymological view of mathematics presents it as a tool that gives ability to learning and critical thinking to be logical in any field of learning. Thus, a scholar's view is in tandem with the etymological view of the subject, therefore, he asserts that "Mathematics is a methodical application of matter. It is so said because the subject makes a man methodical or systematic. Mathematics makes human life orderly and prevents chaos. Certain qualities that are nurtured by mathematics are power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem-solving
ability and even effective communication skills" (Idowu n.d.,1). Mathematics is employed by people of different field of learning and life, such as engineering, banking, Science, Accounting, Business world and others. It is a subject that should be valued by all because of its importance. No wonder a scholar describes it as

"The cradle of all creations, without which the world cannot move an inch. Be it a cook or a farmer, a carpenter or a mechanic, a shopkeeper or a doctor, an engineer or a scientist, a musician or a magician, everyone needs mathematics in their day-to-day life. Even insects use mathematics in their everyday life for existence. There are countless examples of mathematical patterns in nature's fabric. Anyone can be a mathematician if one is given proper guidance and training in the formative period of one's life. A good

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

curriculum of mathematics is helpful in effective teaching and learning of the subject" (Amura-Yusuf 2023,1). As a result of the above view, mathematics should be accorded much attention in society by all and sundry.

Concept of School Climate

A place dedicated for teaching and learning which accord pupils or students opportunity to receive formal and vocational learning should be held in high esteem by all and sundry; it should be an environment that is conducive, accommodating, attracting and beneficial to the stakeholders of education especially pupils or students. This environment is referred to as school climate, which is essential to the learning achievement of any student. Therefore, school climate has a different meaning to different people. To some authors, it is the quality of the school environment, such as safety, discipline practices of the school, organizational structure of the school, quality of relationships between the teachers and students and the level of trust in the school community (global.com/dictionary/school-climate/55178) Also, school climate can be defined as the quality and character of school life that characterises students', parents' and school personnel's norms, school beliefs, relationships cultivated among school, students and parents, teaching and learning practices, as well as organizational and structural features of the school (Hoy n.d). In addition, it is the quality of the school environment which includes safety, discipline practices, leadership relationship with the staff, teachers – students' relationship, organizational and structural components of the school. Thus, the above definitions of school climate signify that, variables such as safety, discipline, organization and structural components, quality relationships among stakeholders and trust formulate the quality of school environment that can engender learning achievement of students. However, if the school organization refuses to consider any of these variables, such may jeopardize student achievement in learning.

School Climate Dimensions

1. School Safety: - Some scholars defined safety as "the structural and social characteristics necessary to maintain and facilitate a secured environment" (Hassan 2019). Thus, this definition signifies that, safety involves physical, emotional and rules cum norms that guide the activities of school in the learning environment. National school climate centre also corroborates the scholars on the definition of school safety.
2. Student-Teacher Relationship: - Another important indicative index of school climate is relationship between student and teacher in the school environment. It is important for school, students and parents to feel connected to one another for a school climate and intellectual development.
3. Teacher-Parent Relationship: - Parental involvement in children's education has been perceived to be having important benefits on students social and emotional health, reduced behavioural problems, drop out and use of substances" (Hassan 2019). This construct thus involves school

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

communicating with the parents about their ward's activities in the school and administrators involving parents in decision making (Loukas 2007, 1-2). Thus, it is proven by some scholars that, parents' greater involvement in their children's education gives them opportunity to communicate with the school personnels about their children's behaviour in the school (Bhat and Bhardwaj 2014, 242).

4. Discipline in the School Environment: - The word discipline is derived from the Latin word "disciplina", meaning teaching, learning and growing. The root idea is that of submission to rules that structure what has to be learnt (Teads n.d). It is also defined by a scholar as the orderly affairs of an organization performed towards its members who adhere to its necessary regulations, because they desire to cooperate harmoniously in promoting the goal of the group and willingly recognize that; to do this, their wishes must be brought into a realistic agreement with the requirements on the group in action (Bhat and Bhardwaj 2014, 242). Moreover, discipline in the school environment is linked with classroom management by the teachers. Teachers must be aware that without a certain level of classroom order, student learning will suffer because of the different disruptive behaviour exhibited by the students such as - Lateness to class, Cell/Mobile phone use during learning, Non-participatory in Classwork and so on.

Methodology

The study employed Descriptive Survey Design which enabled researcher to describe phenomenon of students' disinterest in Mathematics that leads to failure for some and fair pass for some; also, enabled the students to describe the impact of school climate on their academic achievement. The study used senior secondary school students two (2) of public schools in Lagos State. Senior secondary school students two (that is, SS 2) were chosen for this study because they are in the middle class, not writing any external examination and they are not novice in the school system. Also, boys and girls were employed for the population. The sample for the study was one thousand (1,000) respondents from four districts and ten local governments areas, in Lagos state. The study used a systematic random sampling technique. Questionnaire and Achievement Test were used as instruments for the study. They are so, because they elicited information from the respondents easily. The reliability of the instruments (questionnaire and achievement test) was determined using Guttman split half method to estimate the reliability. Reliability values of .709 and .718 were obtained for the questionnaire and the achievement test respectively. The study employed Descriptive Statistics of Frequency Counts, Percentages, Mean and Standard Deviation to analyse the study questions one and two.

Presentation of Results

Research Question One: What is the perceived status of school climate in the public senior secondary schools of Lagos State?

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

Table 1: Showing the Perceived Status of School Climate in the Public Senior Secondary School, Lagos State.

S/N	Items	None Frq	None Per(%)	Rare Frq	Rare Per(%)	Sometimes Frq	Sometimes Per(%)	Often Frq	Often Per(%)	Mean	SD
	1.1 Safety										
1	The school management Discourages students from bullying each other	49	5.1	35	3.7	127	13.3	745	77.9	3.6402	.78214
2	The school provides adequate security, such as solid fence and security men to watch over the students	49	5.1	79	8.3	130	13.6	698	76.0	3.5450	.84943
3	The Teachers are discouraged to harass the students	145	15.2	64	6.7	141	14.7	606	66.4	3.2636	1.11326
4	Violence is not encouraged among the students	105	11.0	55	5.8	130	13.6	666	69.7	3.4195	1.00928
5	Senior students are encouraged to harass the junior students through punishment	526	55.0	116	12.1	165	17.3	149	15.6	1.9341	1.15901
	Weighted Mean									3.16	

Decision Rule: Weighted Mean<2.50 means **Low**,2.50 to 2.99 means **Moderate**, **>** 3.00 means **High**

Table 1.1 reveals that the perceived status of school climate on students in the public senior secondary school in Lagos State is high (3.16). The table presents that school management frowns at student bullying with the mean score of 3.6402 and standard deviation of .78214 (77.9%); she provides adequate security for her students with the mean score of 3.5450 and standard deviation of .84943 (76.0%). Also, teachers harassing students are discouraged with the mean score of 3.2636 and standard deviation of 1.11326 (66.4%); violence among students are prohibited with the mean score of 3.4195 and standard deviation of 1.00928 (69.7%). In addition, senior students harassing junior students is not welcomed by the public school in Lagos State with the mean score of 1.9341 and standard deviation of 1.15901 (55.0%). The analysis above shows that public senior secondary schools in Lagos State takes student safety as utmost priority.

Research Question Two: What is the level of academic achievement in Mathematics among public senior secondary school students in Lagos state?

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.15 (2), May-August, 2025 https://ajemates.org

Table 2: Showing the Level of Academic Achievement in Mathematics among the Public Senior Secondary School Students in Lagos State

			Fail		Fair		Good		Very Good		Excellent		
S/N	Score	Frq	Per(%)	Frq	Per(%)	Frq	Per(%)	Frq	Per(%)	Frq	Per(%)	Mean	SD
1	1-4	14	1.5										
2	5-8			256	26.8								
3	9-12					369	38.6						
4	13-16							286	29.9				
5	17-20									31	3.2	3.0669	.86691
Weighted Mean												3.06	

Decision Rule: Weighted Mean <2.50 means **Low**,2.50 to 2.99 means **Moderate**, **>**3.00 means **High**

Table 2 reveals that, the calculated weighted mean of the academic achievement level in Mathematics among the public senior secondary school students in Lagos state is high (3.06) than the Likert weighted mean. Moreover, the table reveals that 38.6% scored good, which is the highest; also 29.9% scored very good which is higher; 26.8% are fair in their score; while (3.2%) scored excellent and 1.5% failed at 3.0669 mean score and a standard deviation of .86691. This is an indication that, students who did very good, good and excellent could have developed interest in Mathematics through the partnership of their parents in their studies, while those that are fair and failed may have left alone to study without any aid from parents.

Discussion of Findings

This section presents the dimensions of school climate and Mathematics achievement test. The school safety has 3.16 as its calculated weighted mean, student-teacher relationship is 3.45, teacher-parent relationship has 3.50 as its mean, meanwhile discipline in the school environment is 3.52. The calculated weighted mean of the school climate dimensions is more than the weighted mean. The results thus, implies that, the public senior secondary schools in Lagos hold in high esteem school safety, student-teacher relationship, teacher-relationship and school discipline to students' academic achievement.

Moreover, the calculated weighted mean of the academic achievement level in Mathematics among the public senior secondary school students in Lagos state is high (3.06) than the Likert weighted mean. Moreover, the table reveals that 38.6% scored good, which is the highest; also 29.9% scored very good which is higher; 26.8% are fair in their score; while (3.2%) scored excellent and 1.5% failed at 3.0669 mean score and a standard deviation of .86691. This is an indication that, students who did very good, good and excellent could have developed interest in Mathematics through the partnership of their parents in their studies, while those that are fair and failed may have left alone to study without any aid from parents. It is of a truth that, if proper guidance and support from parents are received by the students on this subject matter, student can

perform better in Mathematics. Hence, schools should collaborate to help students develop an interest in Mathematics.

Conclusion

This study focuses on school climate as a determinant of academic achievement in mathematics among public senior secondary school students in Lagos State. It focuses on the impact of school climate on the student's academic achievement in Mathematics. Thus, the study findings depict that, school management does not down play its responsibilities in term of providing safety for the students, maintaining cordial relationship with the students and parents for smooth learning and better academic achievement. Likewise, the school is not lackadaisical concerning discipline among the public senior secondary school students. In a nut shell, this study has proven that school climate is the bedrock and life wire of academic achievement.

Recommendations

1. Public senior secondary schools should continuously uphold safety as one of their priorities.
2. The school should not downplay cordial relationships among teachers, students and parents.
3. Discipline in the public senior secondary schools should be upheld.
4. Students should be encouraged to develop an interest in Mathematics by the school because it is a core subject.
7. Students should cultivate the mindset of excellence in learning.
8. The government should support the school by providing adequate safety measures.

REFERENCES

Akanni, O. O. 2021. Cognitive Skills as Predictors of Academic Achievement of Senior Secondary School Students in Education District II of Lagos -State. *International Journal of Educational Research*, 9, no.1, 5

Amura-Yusuf, W.O. 2023. School Climate: A Tool for Achieving Administrative Effectiveness in Secondary Schools in Kwara State. *Al-Hikmah Journal of Education*, 10 no.1, 1.

Bhat, H. N. and Ritu Bhardwaj. 2014. The Concepts of Academic Achievement, *International Journal of Education and Science Research Review*, 1, no.6, 93.

Hassan, H. 6 Types of Organizational Climate of Schools!!Are you in the Right Climate? Available Online: https://www.likedin.com/pulse/2019.

Hoy, W. K. *School Climate, Available Online: Education Encyclopedia*-State University. Com Education Encyclopedia.

Idowu, O. O. n.d. An Investigation of Mathematics Performance of High School Students in Lagos state, Nigeria: External Factors. *Urban Education Research and Policy Annuals* 4, no.1, 1.

Lefkowitz, M. 2018. Why is Maths so Important? *MIND Research Institute*, 1.

Loukas, A. 2007. What is School Climate? *Leadership Compass 5*, no.1,1-2.

Mohammad, S., C. Atchia and V. Chinapah. 2019. Factors Affecting Academic Achie vement of Secondary School Students in Mauritiu. *Journal of Education and Research*, 9, no.1, 3.

Nyoni, M. T., Nyoni and W. G..Bonka. 2017. Factors Affecting Students'Academic Achievement in Zimbabwe's Rural Secondary Schools: A Case Study of Marimasimbe Secondary School in Jiri Community. *Journal of Economics and Finance*, 2 no.3, 5.

Sakirudeen, A. O. and K.B. Sanni. 2017. Study Habits and Academic Performance of Secondary School Students in Mathematic: A Case Study of Selected Secondary Schools in Uyo Local Education Council. *Research in Pedagogy*, 7, no.2, 1.

Teads, O. Discipline, Available Online: http://www.DesiComment:com

What is School Climate? Available Online: https://www.ig global.com/dictionary/school-climate/55178.