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Counselling Implications of School Climate and Learning Outcomes of Students in Senior Secondary Schools in Delta State, Southern Nigeria

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Abstract---*School climate from studies over the last two decades has been shown to affect students and the process of learning. The purpose of this study, therefore, was to explore the school climate of some selected schools and also to determine the relationship between students' and teachers' perceptions of school climate and students' performance in mini WAEC tests. It is a cross-sectional survey of 664 randomly selected SSS 3 (three) students and 90 teachers in nine secondary schools in the 3 Senatorial districts in Delta State. Two sets of instruments were used to collect data for this study: School Climate Questionnaires (SCQs) and past WAEC objective questions in three subjects (English Language, Mathematics and Biology). The data collected were analyzed using descriptive and inferential statistics. The findings revealed that most students perceived their school's social and academic environment as being poor. A significant difference was found in the physical environment of the school and the performance of the students in Biology. It is recommended that workshops and seminars be organized for school heads and teachers to enhance the positive school climate.*
Keywords---*counselling, descriptive analysis, inferential analysis, school climate questionnaires (SCQs), school climate.*

Introduction

Teaching and learning are the major focus of the school. It has been established in some research findings that effective learning is affected by some institutional factors like the school climate and culture (Osman, 2012). School climate and culture can promote or complicate students' ability to learn (Collie et al., 2012). The exact meaning of school climate has been difficult to pin down yet different people have come up with different definitions and dimensions of school climate. School climate to many reflects the students, school personnel and parents' social, emotional and ethical as well as academic experiences of school life (Finnan et al., 2003). According to the American National School Climate Council, school climate is based on patterns of students, parents, and school personnel's experience of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures (Sly, 2013). School climate therefore is shown in the feelings and

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attitudes about a school expressed by students, teachers, other staff and parents – the way students and staff "feel" about being at school each day (Rapti, 2013). On the other hand, school culture is shared ideas/assumptions, values and beliefs that give an organization its identity and standard for expected behaviour (Njogu, 2012).

School climate from studies over the last two decades has been shown to affect students and the process of learning, which invariably influences learning outcomes (Yusof, 2012; Chukwuemeka, 2013). A positive school climate promotes cooperative learning, high academic achievement, group cohesion, respect and mutual trust (Ghaith, 2003). Reyes et al. (2014), opined that positive school climates play an important role in academic achievement because they foster student learning and promote student engagement.

National School Climate Council identified some major areas and dimensions of school climate, and they include *safety* (rules and norms, sense of physical safety and social-social-emotional security), *teaching and learning* (support for learning and social and civic learning), *interpersonal relationships* (respect for diversity, social support-adults/students) and *institutional environment* (social connectedness/engagement, physical surroundings, leadership and professional relationships) (Gottfredson et al., 2005 & Kohl et al., 2013). BPB (2004) identified four components that make a school climate: a physical environment that is welcoming and conducive to learning; a social environment that promotes communication and interaction; an affective environment that promotes a sense of belonging and self-esteem; and an academic environment that promotes learning and self-fulfilment. It is clear from the definitions and dimensions of school climate that any school with a positive school climate should be able to produce students who will excel academically without cutting corners (Roach & Kratochwill, 2004). Yet the present failure rates at terminal external examinations like; the *West African Examination Certificate* (WAEC), *National Examination Certificate* (NECO) and *Joint Matriculation Examination* (JAMB) should call for serious concern from parents, teachers and the Government. The researchers as educators and trainers of Pre-service teachers are interested in finding out the effects of school climate on the learning outcomes of students. Ordinarily, the final examination of the Senior Secondary Certificate Examination (SSCE) conducted by *the West African Examination Council* (WAEC) would have given the true assessment of the learning outcomes of students in secondary schools after three years of learning the content in the curriculum. It is common knowledge that the plague of examination malpractice across Nigeria during this examination gives a distorted evaluation of students' and schools' performances (Okeahialam, 2013). Despite the massive examination malpractices, lots of students still fail WAEC. This means that; if not for the examination malpractices the failure rate would have been too high.

Thus, this study set out to investigate student academic performance data as well as climate data from nine high schools in Delta State. In addition, to ascertain how students' performance on the mini WAEC exam relates to teachers' and students' impressions of the school climate. It is thought that the exam, which will be overseen by our qualified research assistants and is not connected to certification, will accurately reflect the two years of study (Shaterloo & Mohammadyari, 2011).

The findings of the study will be beneficial at Local, State and National levels to all stakeholders in the educational sector as it will help to reveal the present school climate of schools and the effects of the climate on learning outcomes (Bear et al., 2017; Aldridge & McChesney, 2018). This will help policymakers focus on the improvement of the present school climate as this will enhance positive teaching and learning which invariably reduce the failure rates at terminal examinations. The data for the study will contribute immensely to the school climate data information bank in Nigeria as there is a paucity of indigenous data on school climate; most of the works reviewed in this study are foreign (Cohen, 2006; Thapa et al., 2013).

Tools and Methods

Participants

This study is a cross-sectional survey of *664* SSS 3 (three) students and *90 teachers* in nine secondary schools in the Senatorial districts in Delta State. The students were randomly selected after official permissions were obtained from the principals of the various schools. Equally, the consent of the students was sought before the commencement of the study. Questionnaire data was collected from students and teachers at each high school site during the first term of the *2012/2013 academic year* regarding their perceptions of their school climate (Wiggins, 2006).

Measures

Two sets of instruments were used to collect data for this study: School Climate Questionnaires (SCQs) and past WAEC objective questions in three subjects (English Language, Mathematics and Biology). There were three (3)

sets of SCQs: one filled by the Research Assistants on the Physical Environment; the second by the teachers and the last set by the students. Sets 2 and 3 filled by the students and teachers have 2 major sections: A & B. Section A covers the demographic information and Section B the school climate – physical environment, social environment and academic environment (Mayuni et al., 2022). The second instrument is the WAEC (May/June) objective questions in Biology, Mathematics and English that covered items the students are expected to have been taught in the two previous classes – SSS 1 & 2. There were 30 items in the 3 subjects and were graded over 300. The answers to the WAEC questions were supplied by 2 WAEC examiners in each subject. The results obtained will be analyzed using descriptive and inferential statistics.

Results

Table 1
Frequency and percentage of demographic data based on gender and age of the students

Variables	Sex		Age		
	Male	Female	Below 13yrs	13-17	Above 17yrs
Frequency Count	297	367	90	489	85
Percentage	44.7	55.3	13.6	73.6	12.8

Table 2
Frequency at percentage of demographic data based on areas of specialization of the students

Area of Study	Frequency Count	Percentage
Arts-based	163	24.5
Social since based	306	48.1
Science-based	195	29.4
TOTAL	664	100

Tables 1 and 2 show the frequency and percentages of demographic data of respondents (students). The frequency counts of the male and female students are 297 and 367 respondents respectively. The ages of the students in the three categories are 90, 489 and 85 for age ranges below 13 years, 13 to 17 years and above 17 years. The majority of the students' age range is between 13 to 17 years.
What is the physical environment of each school and Senatorial District?

Table 3
Physical Environment as Reported by the Research Assistants

Schools	Physical Environment		
	Poor	Moderate	Good
1			•
2	•		
3		•	
4		•	
5			•
6			•
7	•		
8	•		
9		•	

Table 4
Frequency count of physical environment by senatorial district

Senatorial Zone	Physical Environment			Total
	Poor	Moderate	Good	
North	1	1	1	3
Central	-	1	2	3
South	2	1	-	3

Tables 3 and 4 show the physical environment of schools and Senatorial Districts, as reported by the Research Assistants. The North District has poor, moderate and good physical environments, Central Delta has 2 moderate and 1 good physical environments and Delta South has 2 schools with poor physical environments and 1 moderate school. The social environment of the schools and perceived by the students and teachers.

Table 5
The perception of the social environment by the students based schools

Schools	Social Environment			Total
	Poor	Moderate	Merit	
1	41	18	21	80
2	33	25	31	89
3	53	14	6	73
4	16	17	10	43
5	33	37	10	80
6	22	14	8	44
7	48	28	13	89
8	51	28	9	86
9	69	8	3	80
Total	366	187	111	664

Table 5 indicates the perception of the student environment by the students based on the schools used for the study. The general perception is that the majority of the students are of the view that the school's social environment is poor. This is followed by those who perceived the school as moderate in the school environment.

Table 6
Preparing count of teachers' perception of the social environment of the schools

Schools	Social Environment			Total
	Poor	Moderate	Merit	
1	4	4	2	10
2	4	5	1	10
3	4	4	1	10
4	5	3	4	10
5	1	4	5	10
6	4	5	1	10
7	5	1	4	10
8	1	5	4	10
9	5	-	5	10
Total	32	31	27	90

Table 6 shows the perception of the teachers on the social environment of the schools. The patterns are similar to the perceptions of the students. The simple majority of the teachers viewed the school environment as poor, followed by moderate and others of the opinion that there is a mutual social environment. The Academic environment of the school is perceived by the students and teachers.

Table 7
Academic count of students' perception

Schools	Academic Environment			Total
	Poor	Moderate	Merit	
1	53	20	7	80
2	58	17	4	89
3	60	10	3	73
4	33	9	1	43
5	61	15	4	80
6	32	12	-	44
7	55	30	4	89
8	75	8	3	86
9	71	8	1	80
Total	508	129	27	664

Table 8
Frequency count of teachers' perception of the academic environment of the schools

Schools	Academic Environment			Total
	Poor	Moderate	Good	
1	5	2	3	10
2	3	5	2	10
3	1	3	6	10
4	2	4	4	10
5	1	6	3	10
6	5	5	-	10
7	5	6	-	10
8	1	7	3	10
9	2	-	1	10
Total	25	43	22	90

Tables 7 and 8 show the perception of the students and teachers on the academic environment of the schools. The majority of the student respondents are of the view that the academic environment is very poor and a few feel that the academic environment is moderate. The pattern of the perception of the teachers differed significantly, as the majority of the teachers feel that the environment is moderate, followed by a poor academic environment.

Table 9
Mean of standard deviation of students' performance in English, biology and mathematics and their physical environment

Subjects	Physical Environment	Mean	Standard	N
English	Poor	4.39	1.81	264
	Moderate	4.48	2.10	196
	Good	4.42	1.58	284
Biology	Poor	4.59	1.97	264
	Moderate	4.00	1.75	196
	Good	3.93	1.85	284
Mathematics	Poor	4.11	3.01	264
	Moderate	4.44	3.43	196
	Good	4.27	2.89	284

Table 10
One-Way Analysis of Variance (ANOVA) summary table for students' performance in English and the physical environment

	SS	df	MS	F	Sis
Between-group	1.13	2	.57	.17	.85
Within group	2227.54	661	3.37		
Total	2228.67	663			

Table 11
One-Way Analysis of Variance (ANOVA) summary table for students' performance in biology and the physical environment

Between sup	62.775	2	31.38	9.54	.00
Within group	2174.86	661	3.29		
Total	2237.63	663			

Table 12
One-Way Analysis of Variance (ANOVA) summary table for students performance in mathematics and the physical environment

Between groups	12.23	2	6.11	.63	.53
Within group	6376.25	661	9.65		
Total	6388.48	663			

$P < .05$

Table 9 indicates the mean performance in English, Biology and Mathematics according to the reported physical environment of the schools. The mean performance in the students for the three subject areas ranges between 3.93 to 4.59 (scores are very close to each other). Tables 10, 11 and 12 show the Way Analysis of Variance for the three subject areas. The result revealed that: there is no significant difference between the physical environment and the students' performance in the English Language ($F = .17$; $p >. 05$), but there is a significant difference between the physical environment and students' performance in Biology ($F = 9.54$; $P < .05$) and there is no significant difference between the physical environment and students' performance in Mathematics. However, the findings revealed a significant difference between the physical environment and the performance in Biology. To find the direction of the difference, a post hoc analysis is carried out in Table 11.

Table 13
Post Hoc Analysis using Scheffe Multiple Range Test in schools performance in biology for the three physical environments

Physical Environment	N	Subject for alpha = .05	
		1	2
Good Environment	204	3.93	
Moderate	196		4.59
Poor Environment	264	4.00	1.00
Sig		.93	

The result in Table 13 shows the Post Hoc Analysis for Biology and the physical environments. There is a significant difference between a poor environment and a moderate physical environment. There is a moderate and good physical environment. Students in poor physical environments performed better than those from good and moderate physical environments.

Table 14
Means and standard deviation of student's performance in english, biology and mathematics concerning the social environment

Subjects	Social Environment	Mean	Standard	N
English	Poor	4.31	1.78	386
	Moderate	4.64	1.99	187
	Good	4.48	1.72	111
Biology	Poor	4.16	1.83	366
	Moderate	4.31	1.86	187
	Good	4.23	1.82	111
Mathematics	Poor	4.12	3.09	366
	Moderate	4.43	3.22	187
	Good	4.45	2.92	111

Table 15
ANOVA summary of student's performance in English and social environment of the schools

Subjects	SS	df	MS	F	Sis
Between groups	13.60	2	6.80	2.03	.13
Within group	2215.28	861	3.35		
Total	2228.67	663			

Table 16
ANOVA summary of students performance in biology and the social environment of the schools

Between groups	2.90	2	1.45	.43	.65
Within group	2234.73	661	3.38		
Total	2237.63	663			

Table 17
ANOVA summary of student's performance mathematics and the social environment of the schools

Between groups	17.60	2	8.80	.91	.40
Within group	6370.88	661	9.64		
Total	6388.48	663			

Table 14 reveals the mean and standard deviation of students' performance in English, Biology and Mathematics and the social environment of the schools. The Range between the mean scores for the three subjects is 4.12 to 6.64. The difference between the mean scores for all the subjects is very small. The analysis of variance tables (Tables 15, 16 and 17) shows that there is no significant difference between the poor, moderate and high social environment and students' performance in English, Biology and Mathematics.

Academic environment and student performance in English, Biology and Mathematics

Table 18
Mean and standard deviation of students' performance in english, biology and mathematics based on the academic environment of the schools

Subject	Academic Environment	Mean	Standard Deviation	N
English	Poor	4.48	1.80	508
	Moderate	4.30	1.99	129
	Good	4.44	1.78	27
Biology	Poor	4.22	1.81	508

	Moderate	4.26	1.94	129
	Good	3.89	1.84	27
Mathematics	Poor	4.22	3.06	508
	Moderate	4.36	3.26	129
	Good	4.44	3.24	27

Table 19
One-Way Analysis of value summary table for students' performance in English, biology and mathematics in the academic environment

Subjects	SS	DF	MS	F	SOS
English					
Between-group	2.59	2	1.29	.38	.68
Within group	2226.09	661	3.37		
Total	2228.67	663			
Biology					
Between-group	3.10	2	1.55	.46	.63
Within group	2234.53	661	3.38		
Total	2237.63	663			
Mathematics					
Between-group	3.19	2	1.59	.17	.18
Within group	6385.29	661	9.66		
Total	6388.48	663			

Tables 18 and 19 show the mean scores and analysis of variance summary Tables respectively. The students' performances in English Language, Biology and Mathematics in line with the academic environment range Between 3.89 to 4.48. The mean scores are relatively low when each subject is considered separately. The analysis of variance statistical procedure shows that there is no significant difference between the poor, moderate and good academic environments concerning the student's performance in English ($F=.38$; $p>.05$), Biology ($F=.46$; $p>.05$) and Mathematics ($F=.17$; $p>.05$)

Discussion

The findings of the study revealed the perceptions of the students and teachers on their school's physical, social and academic environment. The majority of the student's and teachers' perception of their school's social environment is that it is poor and moderate respectively. Also, the students are of the view that the academic environment of their schools is poor whereas the teacher's perception is that the academic environment is moderate (Meristo & Eisenschmidt, 2014; Malinen & Savolainen, 2016). There is a significant difference between the physical environment of the school and students' performance in biology. The performance of the students from poor physical environments is significantly higher than those from moderate and good physical environments. However, this was not anticipated, as students from environments with fair to moderate physical quality should typically perform well in biology classes. This is because of access to laboratories and science equipment. The plausible explanation for this may be that Biology is a subject close to nature, so even in a poor environment, students can still do well in a subject like Biology. The study revealed no significant difference between the physical environment and students' performance in English Language and Mathematics, the social environment and students' performance in English, biology and mathematics and no difference between the academic environment and student's performance in English, biology and mathematics (Stevens et al., 2017; De Simone et al., 2022).

Conclusion

School climate is perceived differently by students and teachers in the nine sampled schools. The Research Assistants on the sports assessment of the physical environment of the schools showed that only three schools out of the nine sampled have good physical environments. There is a need for the government to renovate most of the school buildings. Facilities and equipment should be supplied to schools and the available facilities should not be overstretched. The perception of the majority of the students is that they have a poor social environment. This shows

that teachers are not friendly enough with the students. This should cause concern from relevant authorities: the school, school heads and the Ministry of Education. There is a need to organize workshops and seminars for teachers to enhance their capacity to foster a good social environment. Educational leaders and everyone else involved need to understand the specific characteristics of school climate and how it interacts with teachers, administrators, students, staff and community members (Doyal, 2009).

Recommendation

Based on the findings of this study, it is recommended that school heads and principals should be exposed to the dimensions of school climate. Though the study did not find significant differences in the performance of the students in Mathematics and English based on the social and academic environment the students will have performed better in the three subjects. Their performances in the three subjects are not the best, but they can still do better in an enhanced environment.

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