

# Environmental Challenges and Academic Performance of Senior Secondary School Students in Enugu State

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**ABSTRACT:** The study examines environmental challenges and academic performance of public junior secondary school students in the study area. The research design which was used in this study was descriptive. A sample of 320 proportionally selected respondents or teachers from 16 junior secondary schools spread across 3 Educational zones (via Enugu, Nsukka, and Udi) in the study area participated in the study. A 45 item three expert validated self-structured 4-point rating scale instrument titled “Environmental Challenges and Academic Performance of Students Inventory” (ECAPSI) with a reliability coefficient of 0.861 (using Cronbach Alpha (ra) method) was used to collect the data analyzed using mean and standard deviation to answer the five research questions (with a criterion mean cut off of 2.5), while t-test was used to test the hypotheses at 0.05 level of significance. The study revealed that: teachers did not differ on the perception of influence of classroom environment with ( $t(285, .025)=1.872, p=0.172$ ), location of school ( $t(285, .025)=.198, p=0.657$ ), psycho-social environment ( $t(285, .025)=.627, p=0.429$ ), adequate infrastructural facilities ( $t(285, .025)=.376, p=0.540$ ), and strategies ( $t(285, .025)=.176, p=0.675$ ) on the academic performance of public junior secondary schools in the study area. The study recommended amongst others that school management should ensure that the classroom environment is properly lighted, ventilated, and orderly to improve learning quality and academic performance in public junior secondary schools. Alongside, proper school pre-construction assessment should be conducted to ensure schools are built in a serene, quiet, or peaceful environment that will put teachers and students in the right emotions and mood that will positively affect teaching and learning leading to higher academic performance among students.

**KEYWORD:** Environmental challenges, Academic performance, students, Enugu state

## Introduction

Education has long been regarded as the most valuable developmental strategic tools on the planet for the advancement of humanity and for the sustainable environment. It is the foundation for literacy, technical growth, skill acquisition, and the capacity to mobilize human and material resources toward a common objective (FRN 2004). In any community, education is extremely vital. It is the process of enhancing a person's abilities and capabilities. These abilities include physical abilities, emotional

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abilities, social abilities, and intellectual ability. It's also about realizing one's full potential so that they can become better than they were before.

Education, according to the Oxford English Dictionary (2013), is "organized training and instruction aimed to convey knowledge and develop abilities." Education is the deliberate transmission of society's cultural history, accumulated knowledge, values, and abilities from one generation to the next through schools, colleges, universities, and other institutions Ogbonda (2006). In the same vein, Uriah (2005), states that education is just the various encounters that people have throughout their lives that contribute to nurture personal growth while Elekwa (2013) viewed education principally as a form of socialization in its broadest meaning. It involves the purposeful or unintended acquisition of knowledge and learning skills. This made Haralambos (2013) to see education as essentially a collection of life events that aid in the development of human growth, intellectual and emotional development, and the formation of views and moral ideals.

Nigeria's education system features two main interest groups as a result of deregulation, they are; public education and private education. Consequently, this study concentrated on public education which most citizens embraced as a result of the funding, availability, and accessibility to the people. Public schools are universal, open, and available for everyone; public education is the backbone and crux of any society since education is seen as an instrument of social change as well as national development. That opens the way to the postulation that all citizens have the same educational opportunities as reflected in the national policy on education. It is also a publicly owned property that captivates public attention constantly and is established for the social good of society. Hence Akpa, Udoh, and Faghamije (2005 p. 12-13) opined that: Public education is concerned with the learning of adequate mental and physical skills, abilities, and competencies as well as the acquisition of relevant and balanced knowledge of facts about local and global phenomena as equipment for the individual to live in his community.

Public schools are schools that are controlled and supported by the government of the state or nation and this may apply to Nigeria where public schools are managed at the federal, state, and local government levels. Secondary school can be seen as the level of education following primary school, Merriam Webster dictionary (2009). The facilities, classroom-based health supports, disciplinary policies and practices all contribute to the school atmosphere. It set the tone for the external influences that have an impact on students, Fenzel (2007:15). A positive learning environment can be defined as an environment having enough facilities, well-managed classrooms, school-based health support, equitable disciplinary policies and practices.

This learning environment should be student friendly with modern facilities that will facilitate effective and efficient learning outcomes with adequate qualitative teachers that are motivated towards the attainment of societal educational objectives and goals. These situation calls for effective and efficient school plant management which usually is directed towards the development of school programs that are sustainable for a good learning environment. Consequently, Ajang (2016) opines that a school plant is a set of material things that enhance better academic work or study in educational institutions. It promotes the teaching-learning process with the sole function of making education and learning meaningful and interesting to the learners or students in the school environment.

Furthermore, Asiegbu (2014) argued that school plant environment constitutes the space interpretation of the curriculum which includes the school site, buildings, machines, laboratories, chalkboards, cleaning materials, safety equipment, paths, parking lots, roads, playgrounds, open grounds, trees, flowers and other objects that are used for the execution or implementing educational

programs of the school. According to Bright (1995) the school is like a mirror of the society in which it operates, and the physical environment of the school reflects its true image. This determines the decision of the general public to associate with a particular school or not.

In supporting this view, Ajang (2016) argues that a well-maintained appearance of the school compound is a major condition or standard used to evaluate the tone of a school by parents. It is a well-established position or belief that parents tend to assess school buildings and a well-maintained school environment as the determinant factor to the quality of instructions that exist in that particular school environment. Several studies on the impact of the school environment on academic achievement indicate that a learning environment that isn't conducive to learning might result in underperformance (Chimombe, 2011).

Lumuli (2009) asserts that proper learning facilities at all levels including equipment and human resources enhances the quality and relevance of students' skills. Learning is enhanced as students make contact with conducive environment and this includes teaching and learning resources, modern classrooms, laboratories, libraries, fields, and textbooks, among other things. According to Ministry of Education report on the use of textbooks in the state, the draft report observes the increasing running cost of financing education in Enugu State in 2010 was linked to increasing demand for textbooks. The low ratio of books and school facilities usage among students became the yardsticks to gauge the quality of secondary school education in the state; and this made the government to adopt the policy of free book distribution. This policy of free textbooks to secondary students appears to be impractical given the current economic realities in Nigeria.

In similar vein, Daminabo (2016) makes a similar connection between exam performance and the state of teaching and learning resources in schools. He argued that students from low-income families perform poorly in their examination because they are more likely to live in areas where schools are noisy and lacking the essential amenities required for effective and efficient learning outcome. Physical materials have been shown to have a significant impact in terms of appropriateness and quality on the academic performance of students in the examination and that is the major reason why educational supervisors, inspectors, and monitors are sent to schools for the maintenance of educational standards in the state.

Studies have also discovered that schools that are situated in a tranquil, serene setting and have enough instructional materials are more likely to produce higher-quality grades than schools with inferior physical resources. Daminabo (2016) argues that schools with insufficient classrooms will be compelled to accommodate more students than recommended, putting a strain on resources available for effective teaching and learning within the school in terms of teacher effectiveness, classroom climates, and thus may prompt educational providers to compromise their quality and methodology of teaching as part of the adaptive mechanism to reduce costs.

It is imperative to keep in mind that, the lack of basic facilities like an adequately furnished laboratory with modern sensitive instruments and reagents has compromised the effective teaching of science subjects in a given school. Due to a lack of resources to permit efficient teaching of the subject, topics intended to be taught practically are taught theoretically as part of the adaptive mechanism by teachers. This has a negative impact on the student's performance, lowering their competition for opportunities that are based on achievement in such disciplines. Consequently, Amanchukwu (2002) emphasizes the importance of providing an adequate social environment for children who live in congested, dilapidated, and unhealthy apartments; and they are unavoidably faced with health hazards that create some problems in the learning process

This type of situation is common from the researcher's observations in most of the schools in Enugu State in the Federal Republic of Nigeria and as such, calls for great concern to policymakers and stakeholders to revise this ugly predicament befalling the state. This justifies the need for the establishment of a state-of-the-art school environment in public secondary schools within the context of globalization of educational practices. This strategy is vital because a well-planned school will help students achieve their educational goals by facilitating effective teaching and learning. Similarly, Okoh (2004) has noted that a school environment matters a lot in the determination of the academic performance of students. He further added that a school with a poor dilapidated infrastructure with no seats for the children, tables for teachers, located in dirty and unfenced premises cannot produce high-achieving students.

Consequently, the present study will examine the above-mentioned school environment as it affects student's performance in junior secondary schools especially in Enugu State, and determine the strategies to curb this problem in an attempt to meet the needs for qualitative education that are geared towards the attainment of the goals of national policy on education in the study area. The study is concentrated on the implications of environmental challenges on students' academic performance of Junior Secondary School Students in Enugu State, Nigeria. The learning environments to be covered are the physical environment, classroom environment, service delivery, psycho-social environment and its implications on academic performance and the research was conducted using a correlational research approach.

This study was specifically carried out in Enugu State. Enugu State is one of the component state located in South-eastern Nigeria. It is located at 6°30' North of Equator, and 7°30' East of longitude. It is bordered or bounded by Imo, Abia, Ebonyi, Anambra, Kogi, and Benue States. Today the occupation due to modern development has transited to farming, civil service, trading, and other services accounting for the vast distribution or presence of health, educational, administrative centers, and services institutions at the primary, secondary, and tertiary levels. This leads to the christening of Enugu State as "Coal City State" and "Civil Service State".

The population for the study comprised of all the teachers in all the 285 public junior secondary schools spread across the six educational zones namely: Agbani, Agwu, Enugu, Nsukka, Obollor-Afor, and Udi in Enugu State (Enugu State Ministry of Education, 2019). The study sourced both primary and secondary data. The primary data was sourced from the data obtained from the structured questionnaire or instrument while the secondary data was sourced from textbooks, journals, articles, newspapers/magazines, lecture/lesson notes, internet materials/publications, among other sources.

A sample of 320 respondents was judgmentally drawn to be adequate for the attainment of the objectives of the study. The multistage sampling technique was used. Firstly, the purposive sampling technique was used in the selection of 3 Local Government Areas in Enugu State via Nsukka, Udi, and Enugu. In the second phase, percentage sampling was used in the selection of 3 out of the 6 (i.e. 50%) educational zones, and then, random sampling (using blindfold) was used in the selection or pick of 3 consecutive numbers (out of 6 numbers) representing the 3 educational zones via: Agbani, Enugu, and Nsukka. In the fourth phase, proportionate stratified sampling was used in the selection of 16 junior secondary schools (via 6 from Enugu Educational zone, 5 junior secondary schools from Nsukka Educational Zone, and 5 junior secondary schools from Udi Educational zone). In the fifth and final phase, a random sampling technique was used in the selection of 20 teachers (irrespective of the study taught) in each of the 16 junior secondary schools spread across the three selected Educational zones in Enugu State. This constituted a sample of 320 respondents or teachers that were used for the study.

The instrument for data collection was a 45 item self-structured instrument titled “Environmental Challenges and Academic Performance of Students Inventory” (ECAPSI). The ECAPSI instrument was patterned after a four-point rating scale of “Very High Extent” (VHE, 4 Points), “High extent” (HE, 3 Points), “Low Extent” (LE, 2 Points), and “Very Low Extent” (VLE, 1 Point). Furthermore, the EIFBCS instrument consists of three sections. Section A elicited the demographics of the respondents, Section B comprised of the 35 item variables of environmental challenges (i.e. 7 each for the 5 dimensions of environmental challenges via classroom environment, location of the school, psycho-social environment, infrastructural facilities, and strategies used by teachers to curb environmental challenges), while Section C comprised of the 10 item variables of academic performance.

The Cronbach Alpha (ra) method was used to determine the ECAPSI instrument's reliability or internal consistency. In order to accomplish this, 50 copies of the ECAPSI instrument were sent to 50 instructors from ten junior secondary schools in the Obio-Akpor Local Government Area (five each) (which was not used for the study). The respondents were then given 50 copies of the ECAPSI instrument, which were then recovered, coded, and evaluated using the Cronbach Alpha (ra) method to yield a reliability coefficient of 0.861. Because of the obtained reliability coefficient, the ECAPSI instrument was used for administration. The data was scored, tabulated, coded, and analyzed using mean and standard deviation to answer the research questions at a criterion mean cutoff of 2.5, and t-test was used for the hypotheses at a 0.05 level of significance. The Statistical Package for Social Science (SPSS) 22.0 was used for all statistical calculations.

## RESULTS

**Research Question 1:** To what extent does the Classroom Environment enhance the Academic Performance of Public Junior Secondary School Students in the Study Area?

**Table 1: Mean and Standard Deviation on the Extent Classroom Environment enhance the Academic Performance of Public Junior Secondary School Students in the Study Area**

S/N	The Extent Classroom Environment enhances Students' Academic Performance include:	N = 287		Decision
		Mean	SD	
1	Proper lighting in the class improves learning	3.43	0.79	HE
2	Broken-down facilities (like tables, seats, etc.) in the class makes students learning difficult	3.49	0.60	HE
3	Overcrowding increases the noise level which affects students learning in the class	3.02	0.96	HE
4	The presence of instructional materials (like a board, marker, teaching aids, etc.) improves learning quality	2.78	1.07	H.E
5	Overcrowding in the classroom makes teachers not be interested to teach their lessons	3.32	0.71	HE
6	Poorly ventilated classroom makes students stay away from class during learning time or school hours	3.16	0.82	HE
7	A safe and orderly classroom environment increases students interest in the school	3.04	0.97	HE
<b>Grand Mean</b>		<b>3.18</b>	<b>0.85</b>	<b>HE</b>

*HE (High Extent) =  $\geq 2.50$  while LE (Low Extent) =  $< 2.50$ .*



Table 1 shows the mean rating and standard deviation on the extent classroom environment enhances the academic performance of public junior secondary school students in the study area. It further shows that the extent classroom environment enhance the academic performance of public junior secondary school students in Enugu State includes: broken-down facilities (like tables, seats, etc.) in the class makes students learning difficult ( $\bar{X} = 3.49$ ) in item 2, proper lighting in the class improves learning ( $\bar{X} = 3.43$ ) in item 1, overcrowding in the classroom makes teachers not be interested to teach their lessons ( $\bar{X} = 3.32$ ) in item 5, poorly ventilated classroom makes students stay away from class during learning time or school hours ( $\bar{X} = 3.16$ ) in item 6, safe and orderly classroom environment increases students interest in the school ( $\bar{X} = 3.04$ ) in item 7, overcrowding increases the noise level which affects students learning in the class ( $\bar{X} = 3.02$ ) in item 4, while the least was the presence of instructional materials (like a board, marker, teaching aids, etc.) improves learning quality ( $\bar{X} = 2.78$ ) in item 4. Furthermore, the grand mean score of 3.18 indicates, therefore, that the classroom environment to a relatively high extent enhanced the academic performance of public junior secondary school students in the study area.

**Research Question 2:** To what extent does the location of the schools enhance the academic performance of public junior secondary school students in the study area?

**Table 2: Mean and Standard Deviation on the extent Location of School enhance the Academic Performance of Public Junior Secondary School Students in the Study Area**

S/N	The extent Location of School enhances Students' Academic Performance include:	N = 287		Decision
		Mean	SD	
8	Proper siting of school improves teaching and learning	3.43	0.76	HE
9	Building schools in hot or smelly environments can affect the health, emotions, and mood of students	3.06	0.85	HE
10	Building school in a flooded and polluted environment affects teachers and students school interest	2.96	0.99	HE
11	Situating schools in a well-secured environment improves teaching and learning	3.17	0.81	H.E
12	Locating schools near markets increases the noise level that affects teaching and learning	2.98	0.91	HE
13	Siting school in a safe environment increases reading and learning time	3.24	0.81	HE
14	Siting schools in a serene, quiet, or peaceful environment improves students motivation towards learning	2.98	0.92	HE
<b>Grand Mean</b>		<b>3.12</b>	<b>0.86</b>	<b>HE</b>

**HE (High Extent) =  $\geq 2.50$  while LE (Low Extent) =  $< 2.50$ .**

Table 2 shows the mean rating and standard deviation on the extent location of the school enhances the academic performance of public junior secondary school students in the study area. It further shows that the extent location of school enhance the academic performance of junior secondary school students in the study area includes: proper siting of school improves teaching and learning ( $\bar{X} = 3.43$ ) in item 8, siting school in a safe environment increases reading and learning time ( $\bar{X} = 3.24$ ) in item 13, situating schools in a well-secured environment improves teaching and learning ( $\bar{X} = 3.17$ ) in item 11, building schools in the hot or smelly environment can affect the health, emotions,

and mood of students ( $\bar{X} = 3.06$ ) in item 9, locating school near markets increases the noise level that affects teaching and learning in item 12, and siting schools in a serene, quiet or peaceful environment improves students motivation towards learning in item 14 (each with  $\bar{X} = 2.98$ ), while the least was building a school in a flooded and polluted environment affects teachers and students school interest ( $\bar{X} = 2.96$ ) in item 10. Furthermore, the grand mean score of 3.12 indicates, therefore, that location of the school to a relatively high extent enhanced the academic performance of public junior secondary school students the study area.

**Research Question 3:** To what extent does a Psycho-social Environment enhance the Academic Performance of Public Junior Secondary School Students in the Study Area?

**Table 3: Mean and Standard Deviation on the extent Psycho-social Environment enhance the Academic Performance of Public Junior Secondary School Students in the Study Area**

S/ N	The extent Psycho-social Environment enhance Students' Academic Performance include:	N = 287		Decisi on
		Mean	SD	
15	Fostering positive social interaction among students	3.41	0.84	HE
16	Improve students confidence and motivation in the learning process	3.17	0.82	HE
17	Help teachers increase the level of academic support provided to students	3.19	0.96	HE
18	Enhances students exhibition of positive attitudes that will inspire learning	3.06	0.94	H.E
19	Help students to develop the capability to experiment using various learning aids or devices	2.96	1.01	HE
20	Helping teachers to possess a positive character that students can emulate	3.19	0.85	HE
21	Increase teachers exhibition of the level of intelligence to professionally execute their tasks	3.14	0.88	HE
<b>Grand Mean</b>		<b>3.16</b>	<b>0.90</b>	<b>HE</b>

**HE (High Extent) =  $\geq 2.50$  while LE (Low Extent) =  $< 2.50$ .**

Table 3 shows the mean rating and standard deviation on the extent psycho-social environment enhances the academic performance of public junior secondary school students in the study area. It further shows that the extent psycho-social environment enhance the academic performance of public junior secondary school students in the study area includes: fostering positive social interaction among students ( $\bar{X} = 3.41$ ) in item 15, helping teachers increase the level of academic support provided to students in item 17, and helping teachers to possess a positive character that students can emulate in item 20 (each with  $\bar{X} = 3.19$ ), improve students confidence and motivation in the learning process ( $\bar{X} = 3.17$ ) in item 16, increase teachers exhibition of the level of intelligence to professionally execute their tasks ( $\bar{X} = 3.14$ ) in item 21, enhances students exhibition of positive attitudes that will inspire learning ( $\bar{X} = 3.06$ ) in item 18, while the least was help students to develop the capability to experiment using various learning aids or devices ( $\bar{X} = 2.96$ ) in item 19. Furthermore, the grand mean score of 3.16 indicates, therefore, that the psycho-social environment to a relatively high extent enhanced the academic performance of public junior secondary school students in the study area.

**Research Question 4:** To what extent does an adequate Infrastructural Facility enhance the Learning Process and Academic Performance of Public Junior Secondary School Students in the Study Area?

**Table 4: Mean and Standard Deviation on the extent adequate Infrastructural Facilities enhance the Learning Process and Academic Performance of Public Junior Secondary School Students in the Study Area**

S/N	The extent adequate Infrastructural Facilities enrich Learning and Academic Performance include:	N = 287		Decision
		Mean	SD	
22	Well-equipped libraries help students to read and do assignments	3.36	0.81	HE
23	Availability of school plants (like chairs, tables, desks, etc.) enhance teaching and learning	3.25	0.77	HE
24	Well maintained school facilities improve teaching and learning may not take place	2.99	0.83	HE
25	Equipping classrooms with facilities provide students with the comfort and enthusiasm to effectively learn	3.07	0.93	H.E
26	Standard game and recreational facilities help students to be mentally stable and agile to learn	2.86	0.92	HE
27	Well-equipped laboratories improve students practical knowledge	3.14	0.83	HE
28	Availability of functional toilets or conveniences help to improve teachers and students health and wellbeing	3.08	0.90	HE
<b>Grand Mean</b>		<b>3.11</b>	<b>0.86</b>	HE

**HE (High Extent) =  $\geq 2.50$  while LE (Low Extent) =  $< 2.50$ .**

Table 4 shows the mean rating and standard deviation on the extent adequate infrastructural facilities enhance the academic performance of public junior secondary school students in the study area. It further shows that the extent adequate infrastructural facilities enhance the academic performance of public junior secondary school students in the study area includes: well-equipped libraries help students to read and do assignments ( $\bar{X} = 3.36$ ) in item 22, availability of school plants (like chairs, tables, desks, etc.) enhance teaching and learning ( $\bar{X} = 3.25$ ) in item 23, well-equipped laboratories improves students practical knowledge ( $\bar{X} = 3.14$ ) in item 27, availability of functional toilets or conveniences help to improve teachers and students health and wellbeing ( $\bar{X} = 3.08$ ) in item 28, equipping classrooms with facilities provides students with the comfort and enthusiasm to effectively learn ( $\bar{X} = 3.07$ ) in item 25, well-maintained school facilities improve teaching and learning may not take place ( $\bar{X} = 2.99$ ) in item 24, while the least was standard game and recreational facilities help students to be mentally stable and agile to learn ( $\bar{X} = 2.86$ ) in item 26. Furthermore, the grand mean score of 3.11 indicates, therefore, that adequate infrastructural facilities to a relatively high extent enhanced the academic performance of public junior secondary school students in the study area.

**Research Question 5:** To what extent does the Strategy used by Teachers to Curb Environmental Challenges affect Academic Performance in Public Junior Secondary Schools in the Study Area?



**Table 5: Mean and Standard Deviation on the extent the Strategies used by Teachers to Curb Environmental Challenges that affect Academic Performance in Public Junior Secondary Schools in the Study Area**

S/N	The extent Strategies used by Teachers to curb Environmental Challenges Influence Academic Performance include:	N = 287		Decision
		Mean	SD	
29	Regularly using instructional materials that can help students understand what is taught	3.32	0.94	HE
30	Helping students engage in extracurricular activities that increase their level of innovation and motivation	3.19	0.76	HE
31	Building and cultivating a cordial relationship that can promote students learning	3.19	0.94	HE
32	Building connections with each student even in large class size	3.16	.88	H.E
33	Engaging students in activities that excite and captures their attention	3.17	0.87	HE
34	Planning lessons to meet the needs of each student can increase school interest	3.18	0.86	HE
35	Giving students group work that can increase their socialization and bonding with other students	3.07	0.98	HE
<b>Grand Mean</b>		<b>3.18</b>	<b>0.89</b>	<b>HE</b>

**HE (High Extent) =  $\geq 2.50$  while LE (Low Extent) =  $< 2.50$ .**

Table 5 shows the mean rating and standard deviation on the extent of strategies used by teachers to curb environmental challenges that affect academic performance in public junior secondary schools in the study area. It further shows that the extent strategies used by teachers to curb environmental challenges that affect academic performance in public junior secondary schools in the study area include: regularly using instructional materials that can help students understand what is taught ( $\bar{X}$  = 3.32) in item 29, helping students engage in extracurricular activities that increase their level of innovation and motivation in item 30, and building and cultivating a cordial relationship that can promote students learning in item 31 (each with  $\bar{X}$  = 3.19), planning lessons to meet the needs of each student can increase school interest ( $\bar{X}$  = 3.18) in item 34, engaging students in activities that excite and captures their attention ( $\bar{X}$  = 3.17) in item 33, building connections with each student even in large class size ( $\bar{X}$  = 3.16) in item 32, while the least was giving students group work that can increase their socialization and bonding with other students ( $\bar{X}$  = 3.07) in item 35. Furthermore, the grand mean score of 3.18 indicates, therefore, that strategies used by teachers to curb environmental challenges to a relatively high extent affected the academic performance in public junior secondary schools in the study area.

### Test of Hypotheses

**Hypothesis 1:** There is no substantial difference in the Perception of Teachers on the Influence of Classroom Environment on the Academic Performance of Public Junior Secondary Schools in the Study Area.

**Table 6: Summary of T-test Analysis on the Dissimilarity in the Perception of Teachers on the Influence of Classroom Environment on the Academic Performance of Public Junior Secondary Schools in the Study Area**

Teacher	N	Mean	SD	t	Df	p-value	Decision
Male	154	22.3766	2.05505	1.872	285	0.172	NS
Female	133	22.0602	2.53090				

**Decision rule:** if  $p < .05$  reject  $H_0$ , else retain  $H_0$ . NS= Significant,  $p > .05$ , \* significant,  $p < .05$

Table 6 shows that there is no substantial difference in the perception of teachers on the influence of classroom environment on the academic performance of public junior secondary schools in the study area ( $t_{(285, .025)} = 1.872$ ,  $p = 0.172$ ). The null hypothesis was retained. The mean difference was relatively close but in favour of the male teachers. The implication is that both male and female teachers do not vary in their perception of how the classroom environment influences the academic performance of public junior secondary schools in the study area.

**Hypothesis 2:** There is no substantial difference in the Perception of Teachers on the Influence of the Location of the School on the Academic Performance of Public Junior Secondary Schools in the Study Area.

**Table 7: Summary of T-test Analysis on the Dissimilarity in the Perception of Teachers on the Influence of Location of the School on the Academic Performance of Public Junior Secondary Schools in the Study Area**

Teacher	N	Mean	SD	t	Df	p-value	Decision
Male	154	22.0390	2.04806	.198	285	0.657	NS
Female	133	21.5414	2.10523				

**Decision rule:** If  $p < .05$  reject  $H_0$ , else retain  $H_0$ . NS= Significant,  $p > .05$ , \* Significant,  $p < .05$

Table 7 shows that there is no substantial difference in the perception of teachers on the influence of location of the school on the academic performance of public junior secondary schools in the study area ( $t_{(285, .025)} = .198$ ,  $p = 0.657$ ). The null hypothesis was retained. The mean difference was relatively close but in favour of the female teachers. The implication is that both male and female teachers do not vary in their perception of how the location of school influences the academic performance of public junior secondary schools in the study area.

**Hypothesis 3:** There is no substantial difference in the Perception of Teachers on the Influence of Psycho-social Environment on the Academic Performance of Public Junior Secondary Schools in the Study Area.

**Table 8: Summary of T-test Analysis on the Dissimilarity in the Perception of Teachers on the influence of Psycho-social Environment on the Academic Performance of Public Junior Secondary Schools in Enugu State**

Teacher	N	Mean	SD	t	Df	p-value	Decision
Male	154	22.0130	2.17829	.627	285	0.429	NS
Female	133	22.2256	2.05462				

**Decision rule:** if  $p < .05$  reject  $H_0$ , else retain  $H_0$ . NS= Significant,  $p > .05$ , \* significant,  $p < .05$

Table 8 shows that there is no substantial difference in the perception of teachers on the influence of psycho-social environment on the academic performance of public junior secondary schools in the

study area ( $t_{(285, .025)} = .627$ ,  $p=0.429$ ). The null hypothesis was retained. The mean difference was relatively close but in favour of the female teachers. The implication is that both male and female teachers do not vary in their perception of how the psycho-social environment influences the academic performance of public junior secondary schools in the study area.

**Hypothesis 4:** There is no substantial difference in the Perception of Teachers on the Influence of Adequate Infrastructural Facilities on the Academic Performance of Public Junior Secondary Schools in the Study Area.

**Table 9: Summary of T-test Analysis on the Dissimilarity in the Perception of Teachers on the Influence of Adequate Infrastructural Facilities on the Academic Performance of Public Junior Secondary Schools in the Study Area**

Teacher	N	Mean	SD	t	Df	p-value	Decision
Male	154	21.7532	1.83043	.376	285	0.540	NS
Female	133	21.7669	1.80020				

**Decision rule:** if  $p < .05$  reject  $H_o$ , else retain  $H_o$ . NS= Significant,  $p > .05$ , \* significant,  $p < .05$

Table 4.9 shows that there is no substantial difference in the perception of teachers on the influence of adequate infrastructural facilities on the academic performance of public junior secondary schools in the study area ( $t_{(285, .025)} = .376$ ,  $p=0.540$ ). The null hypothesis was retained. The mean difference was relatively close but in favour of the female teachers. The implication is that both male and female teachers do not vary in their perception of how adequate infrastructural facilities influence the academic performance of public junior secondary schools in the study area.

**Hypothesis 5:** There is no substantial difference in the Perception of Teachers on the Influence of Strategies to Curb Environmental Challenges that affect the Academic Performance of Public Junior Secondary Schools in the Study Area.

**Table 10: Summary of T-test Analysis on the Dissimilarity in the Perception of Teachers on the Influence of Strategies to Curb Environmental Challenges that affect the Academic Performance of Public Junior Secondary Schools in the Study Area**

Teacher	N	Mean	SD	t	Df	p-value	Decision
Male	154	22.1234	2.52135	.176	285	0.675	NS
Female	133	22.4737	2.43267				

**Decision rule:** if  $p < .05$  reject  $H_o$ , else retain  $H_o$ . NS= Significant,  $p > .05$ , \* significant,  $p < .05$

Table 10 shows that there is no significant difference in the perception of teachers on the influence of strategies to curb environmental challenges that affect the academic performance of public junior secondary schools in the study area ( $t_{(285, .025)} = .176$ ,  $p=0.675$ ). The null hypothesis was retained. The mean difference was relatively close but in favour of the female teachers. The implication is that both male and female teachers do not vary in their perception of the influence of strategies to curb environmental challenges that affect the academic performance of public junior secondary schools in the study area.

## Discussion of Findings

The grand mean score in Table 1 was 3.18, indicating the extent to which the classroom environment improves the academic performance of public junior secondary school students in the study area includes: broken-down facilities (like tables, seats, etc.) in the class makes students learning difficult, proper lighting in the class improves learning, overcrowding in the classroom makes teachers not be interested to teach their lessons, poorly ventilated classroom makes students stay away from class

during learning time or school hours, safe and orderly classroom environment increases students interest in the school, overcrowding increases the noise level which affects students learning in the class, and presence of instructional materials (like a board, marker, teaching aids, etc.) improves learning quality. This finding is in conformity with the views of Moradeyo and Adeyemi (2013) who gives emphasis to those components like furniture, instructional aids or materials (like markers, boards, etc.), ventilation, and thermal comfort. Including temperature, lighting, adequate class size, and noise control are instructional features or factors essential for the comfort and performance of teachers and students in any learning environment. Hence, Kpee (2013) stated that teachers are happy and committed to discharging their duties in a school environment where all the physical learning facilities especially laboratories are provided to support and enhance learners or students' practical development in secondary schools or educational institutions

Table 2 revealed a grand mean score of 3.12, indicating that the extent to which school location influences academic performance of public junior secondary school pupils in the study area includes: proper siting of school improves teaching and learning, siting school in a safe environment increases reading and learning time, situating schools in well-secured environment improves teaching and learning, building schools in the hot or smelly environment can affect the health, emotions, and mood of students, locating school near markets increases the noise level that affects teaching and learning, siting schools in a serene, quiet or peaceful environment improves students motivation towards learning, and building school in a flooded and polluted environment affects teachers and students school interest. This finding is in line with the view of Chukwuemeka (2013) that the proper or suitable size, shape, siting, design, or location of school buildings in safe, quiet or serene, and clean environment makes teaching and learning comfortable, conducive and has a direct impact on the performance of its users (i.e. teachers and students).

The grand mean score in Table 3 was 3.16, indicating that the extent to which the psychosocial environment improves the academic performance of public junior secondary school pupils in the study area includes: fostering positive social interaction among teachers increase the level of academic support provided to students, helping teachers to possess a positive character that students can emulate, improve students confidence and motivation in the learning process, increase teachers exhibition of the level of intelligence to professionally execute their tasks, enhances students exhibition of positive attitudes that will inspire learning, and help students to develop the capability to experiment using various learning aids or devices. This finding is consistent with Adamu (2015) that teachers grasping and deeper understanding of the complexity of issues among students would enable them to develop measures at fostering positive social interaction, increasing academic support, an exhibition of the level of intelligence, professionally execution of tasks, and possession of positive attitudes and character that would be emulated thereby improving students' confidence and motivation in the entire learning processes and schooling.

Table 4 revealed a grand mean score of 3.11, indicating that adequate infrastructural conditions in the study region improve academic performance of public junior secondary school pupils in the following ways: well-equipped helps students to read and do assignments, availability of school plants (like chairs, tables, desks, etc.) enhance teaching and learning, well-equipped laboratories improve student practical knowledge, availability of functional toilets or conveniences help to improve teachers and students health and wellbeing, equipping classrooms with facilities provides students with the comfort and enthusiasm to effectively learn, well-maintained school facilities improves teaching and learning may not take place, and standard game and recreational facilities help students to be mentally stable and agile to learn. This finding aligns with Okudo and Omotuyole (2014) emphasize that play or recreation eases the class or academic pressures of

students thereby playing a very important cognitive development that occurs in stages towards the enormous benefit of students. Consequently, adequate or well-equipped laboratories, libraries with chairs, tables, desks, and other essential materials of facilities like conveniences improve teaching and learning, practical knowledge, and enthusiasm to effectively learn and accomplish school objectives (Matthew, 2013). Therefore, it is difficult for teachers to be optimally interested in doing a good job of teaching in a dilapidated building stuffed with outdated or even non-functional infrastructural facilities (Ogbadu&Arong, 2010).

Table 5 shows a grand mean score of 3.18, indicating that instructors at public junior secondary schools in the study area adopted the following measures to combat environmental issues that affect academic performance: regularly using instructional materials that can help students understand what is taught, helping students engage in extracurricular activities that increase their level of innovation and motivation, building and cultivating a cordial relationship that can promote students learning, planning lessons to meet the needs of each student can increase school interest, engaging students in activities that excite and captures their attention, building connections with each student even in large class size, and giving students group work that can increase their socialization and bonding with other students. This finding is in line with the previous finding by Gonzalez-Mena and Eyres (2010) who emphasized that the educational training of teachers will better prepare them with the skill to understand and activate the use techniques, resources, and strategies (like regular use of instructional materials, personalized lesson planning, engaging in extracurricular activities, group work, and ensuring order seating arrangement, etc.) that could increase the level of bonding, socialization, participation in different classroom setting or situation, innovation, motivation of each student, and confidence and interest in schooling or the learning process thereby improving performance. Therefore, Amole, Ajayi, Adeyemi, and Yusuf (2015) emphasized that the periodic training of teachers would increase their expertise, mastery, and skill for better performance in their sensitive discharge of the responsibility, and using strategies or activities that can help them build connections with each student even in large class size, motivate them, and increase the school interest of students despite the challenges.

The result in Table 6 shows that there is no substantial difference in the perception of teachers on the influence of classroom environment on the academic performance of public junior secondary schools in the study area. This finding is in agreement with Mendal (2016) that teachers perceive or see the good condition of the learning environment such as classrooms, textbooks, equipment, school suppliers, and other instructional materials as a catalyst for adequate teaching to produce the desired result.

Table 7 shows that there is no notable change in teachers' perceptions of the impact of school location on academic achievement in public junior secondary schools in the research area. This finding is in line with Mohammed and Brighith (2010), who stated that teachers emphasize the shape, design, wall colors, window surfaces, interior common spaces, courtyards, and environmental nature as contributing to the aesthetics of the school environment, which creates a comfortable environment for students and helps to improve academic performance.

Table 8 shows that there is no large discrepancy in teachers' perceptions of the impact of the psychosocial environment on academic achievement in public junior secondary schools in the research area. This finding aligns with Meador (2019) that teachers' understanding of a psycho-social environment would enhance the integration of measures that will ease complex emotional problems that makes learning a very daunting exercise.



Table 9 shows that teachers' perceptions of the impact of proper infrastructural facilities on academic achievement in public junior secondary schools in the research area are not significantly different. This discovery is consistent with Odeh, Oguche, and Ivagher (2015) that teachers are of the view that adequate infrastructural facilities (like buildings, conveniences, tables, chairs, among others) help to provide the comfort, and solid foundation for learning, development of positive attitudes and performance of students.

Table 10 shows that there is no great disparity in teachers' perceptions of the impact of environmental issues on academic achievement in public junior secondary schools in the research area. This finding is in line with the position of Gonzalez-Mena and Eyres (2010) who highlighted that the educational training of teachers (both male and female) will better prepare them with the skill to understand and activate techniques, tools, or resources in different classroom settings or situation towards ensuring the participation and motivation of each student in the learning process thereby improving performance, confidence, and interest in schooling.

### Conclusion

The study concludes that the location the of school is a vital consideration that would lead to the siting of safe, secured, serene, quiet or peaceful, and clean school and adequate classroom environment (with orderliness, proper lighting, ventilation, tables, seats, etc.) that would enhance teachers positive attitude and interest to foster positive social interaction/socialization that improves learning quality, increases students confidence, motivation, optimistic character, and academic performance in the learning process. Furthermore, well-equipped libraries, laboratories, functional toilets or conveniences, availability of school plants (like chairs, tables, desks, etc.), and standard game and recreational facilities are measures and strategies (like intelligent and professional use of instructional materials (like a board, marker, teaching aids, etc.), and engaging students in group tasks and extracurricular activities) that can curb environmental challenges that affect academic performance in public junior secondary schools in the study area.

### Recommendation

Based on the findings of the study the following recommendations were made:

1. The school management should make sure that the classroom environment is properly lighted, ventilated, and orderly to improve learning quality and academic performance in public junior secondary schools.
2. Enugu State Government should ensure that more public junior secondary schools are constructed and equipped with functional facilities (like tables, seats, etc.) that will enhance safety, comfort, health, interest, and performance of teachers and students in the learning process.
3. Schools should be sited or located in a safe, secured, and aesthetic or clean environment where teaching and learning time will not be interrupted or disrupted especially by external infiltrators.
4. Proper school pre-construction assessment should be conducted to make schools be built in a serene, quiet, or peaceful environment that will put teachers and students in the right emotions and mood that will positively affect teaching and learning.
5. Teachers as professionals are encouraged to possess positive character and intelligent posture that students can emulate to improve their confidence, inspiration, and motivation in the learning process.
6. The Ministry of Education in conjunction with the Enugu State Universal Basic Education Board (ESUBEB) should ensure that well-equipped libraries, laboratories, recreational facilities, and

conveniences are provided with the requisite standard facilities that will improve students' practical knowledge, agility, comfort, and enthusiasm to effectively learn.

7. Teachers should regularly use instructional materials while planning lessons to stimulate, excite, and capture students' attention, interest, and motivation in the learning process.
8. Teachers should engage students in group tasks, and other extracurricular activities (like quizzes, debating, seminar, etc.) that can improve teachers and students' understanding, connections, bonding, socialization, innovation, and performance.

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