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RELATIONSHIP BETWEEN SCHOOL PHYSICAL ENVIRONMENT AND STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN ONITSHA SOUTH LOCAL GOVERNMENT AREA OF ANAMBRA STATE

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Abstract

This study investigated relationship between school physical environment and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. Three specific purposes and three research questions guided the study. Correlational research design was adopted for the study. The population for the study comprised all the 641 Senior Secondary School (SSS II) students from the six public secondary schools in Onitsha South Local Government Area of Anambra State. A sample size of 160 SS II students was drawn for the study through proportionate stratified sampling technique. Researcher-structured rating scale titled "School Physical Environment Rating Scale (SPERS)" and Standardized Academic Performance Test (APT) obtained from English Language and Mathematics teachers were used for data collection. The instrument was face validated by three experts; two experts in Educational Management and Policy and one in Measurement and Evaluation Unit in the Department of Educational Foundations, all in the Faculty of Education Nnamdi Azikiwe University, Awka. Internal consistency co-efficient of 0.81, 0.84, and 0.89 were obtained using Cronbach Alpha statistical method. The researcher administered the instrument to the respondents with the help of three research assistants. Data were analyzed using Pearson Product Moment Correlation Coefficient (r). The findings revealed that there is a positive relationship between school physical environment (school site, school infrastructural facilities, and school furniture) and students'

academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. Thus, the study concluded that school physical environment is an important variable that impacts students' academic performance and success in public secondary schools in Onitsha South Local Government Area of Anambra State. Based on the findings, the study recommended among others that policy makers should prioritize funding for school infrastructure improvements to enhance student performance, particularly in underserved areas with suboptimal school sites. Secondary school principals should ensure regular maintenance and upgrades of school infrastructural facilities to create an optimal learning environment that boosts student academic performance. Teachers should effectively utilize available infrastructural resources and encourage students to take full advantage of conducive classroom environments to improve learning outcomes. Students should maximize the benefits of well-maintained school facilities and furniture by adopting disciplined study habits and active engagement in learning activities.

Keywords: School Physical Environment; Students' Academic Performance; Secondary Schools.

Introduction

Education is globally acknowledged as a potent and dynamic instrument for national development and societal transformation. It is an important instrument for the development of the individual and the society as it is a weapon against poverty, illiteracy and disease (Nwankwo, 2018). The National Policy on Education (FRN, 2013) viewed education as that process that helps to develop the whole being, physically, mentally, morally, politically, socially and technologically to enable individuals function in any environment in which they may find themselves. The policy also made provision for equal access to educational opportunities for all citizens at the primary, secondary and tertiary levels. Secondary school education refers to education students receive after primary education and before the tertiary education. FRN (2013) viewed secondary school education as the education children receive after a successful completion of nine years basic education. The broad goals and objectives of secondary education according to FRN (2013) include: the provision of specific sets of competencies and skills that will improve individuals' lives and enable them to participate actively in the development of the economy. In essence, secondary school education in Nigeria is recognized as a prerequisite for quality human life and labour skills, as well as a sine qua non for sustainable economic development of the country. Admittedly, attainment of the primary objectives of secondary school education as specified in the policy demands that teachers have crucial role to play in the school system. Admittedly, attainment of the primary objectives of secondary school education as specified in the policy demands that schools should effectively provide quality education, foster the acquisition of critical skills and prepare students adequately for further education. In essence, when the objectives of secondary education are met through quality teaching, adequate resources, and supportive school environments; students are equipped with the skills and knowledge that directly contribute to improved academic performance.

Students' academic performance refers to a student's success in acquiring and applying knowledge and skills in their academic pursuits. It can be measured through various indicators such as grades, test scores, academic awards, and recognition for outstanding achievements. Academic performance according to Kanu and Ndibe (2023) is student's level of success in learning and mastering academic materials. The scholars maintained that students' academic performance is measured by various means such as grades, test scores, attendance records, participation in extracurricular activities, and other forms of academic recognition. Students' academic performance can be influenced by various factors, including the student's intelligence, motivation, learning style, study habits, parental involvement, school physical environment, teacher quality, and socioeconomic background. In order to maximize academic performance, it is important for students to develop good study habits, set realistic goals, and maintain a positive attitude towards learning (Tanner, 2020). School management, teachers and parents can also play a significant role in promoting academic performance by providing a supportive and stimulating school climate, encouraging students to engage in extracurricular activities, providing feedback and guidance, and providing opportunities for additional academic support if needed through conducive physical environment.

The school physical environment encompasses all tangible elements within the school setting, including buildings, classrooms, playgrounds, and overall school layout, which collectively influence the educational experience. This environment is characterized by the quality and design of infrastructure, which can affect student learning and teacher effectiveness (Obi & Nwachukwu 2021). Well-constructed, well-maintained buildings promote safety and comfort, essential for optimal learning. According to Martinez and Perez (2019) the arrangement of furniture and resources in classrooms is a crucial aspect that impact interaction, collaboration, and the overall learning atmosphere. Mutie and Mwangi (2023) noted that the physical environment must also address safety concerns. Adequate classroom space and seating arrangements are vital components of the school's physical environment that influence students' ability to focus and engage in learning activities. The presence of functional and accessible sanitary facilities in schools contributes to a healthier learning environment, reducing absenteeism and improving academic performance (Woolner & Clark, 2021). There are various components of school physical environment as recorded in literature. Barrett et al. (2019) explored various elements of the school physical environment; including lighting, air quality, noise levels, and space utilization. They noted that these components significantly impact student engagement, behavior, and academic performance. In his work on school design, Maxwell (2022) emphasized the importance of classroom layout, lighting, and ventilation as key components of the physical environment that can affect student learning and well-being. In their research, Adeyemo and Oloruntoba (2022) highlighted components such as school infrastructural facilities, space utilization, furniture arrangement, and availability of resources (like technology and libraries) as vital elements of the physical environment that impact student engagement and achievement. This study however will explore school site, school infrastructural facilities and school furniture as important components of school physical facilities that influence students' academic performance in secondary schools.

School site is one aspect of the school plant planning that is very important and should be taken seriously by the educational administrators. A school site refers to the physical location and facilities of an educational institution, including the land, buildings, and surrounding environment where teaching and learning occur (Eze & Okeke, 2021). It encompasses both the tangible aspects, such as classroom layouts and recreational areas, and the community context that influences the educational experience and student engagement. Owens and Valesky (2021) noted that school site is beyond just its physical attributes, a school site encompasses the educational environment, including classroom layouts, recreational areas, and facilities that support academic and extracurricular activities. A well-secured school site contributes to a safe learning atmosphere, crucial for effective teaching and learning and should be supported with adequate school infrastructural facilities. School infrastructural facilities have a profound significance as part of the school plant in secondary schools. They provide a frame for all other aspects of the school plant. According to Adamu and Olaoye (2019), school infrastructural facilities refer to the physical and organizational structures, including buildings, classrooms, laboratories, libraries, and recreational areas, that support the educational process within a school environment. These facilities are crucial for providing a conducive learning atmosphere, as they directly impact students' academic performance, engagement, and overall well-being. Similarly, school furniture is essential school plant required in realizing the aims and objectives of education with respect to students' academic performance. Classroom furniture plays a crucial role in students learning. Every school should have adequate furniture for the needs of students and staff of the school. School furniture refers to the various types of movable equipment used in educational settings, such as desks, chairs, tables, and storage units, designed to facilitate learning and instruction (Smith & Cooper, 2019). Proper school furniture supports student engagement and comfort; hence, allowing for effective learning environments that promote academic success. Martínez-Cano et al. (2023) remarked that school furniture includes items that are specifically designed to accommodate the physical needs of students and educators, ensuring ergonomic safety and promoting good posture during learning activities. Ergonomically designed furniture can reduce discomfort and fatigue, thus enhancing students' focus and productivity during classes.

The importance of the school climate to students' performance is relevant to a high degree, since it is indicative of how well the students behave in order to actualize their full potential. Adeyemi (2019) research on school physical environment and academic performance of secondary school students in Ondo State, Nigeria revealed that the quality of the physical environment, including the site, infrastructure, and furniture, has a positive correlation with students' academic outcomes. Ofoegbu and Asogwa (2020) study showed that the presence of adequate school infrastructure and appropriate furniture contributed significantly to improved student performance. Furthermore, Igbokwe and Okeke (2021) found that well-maintained school sites and modernized infrastructural facilities were linked to higher academic performance among students. In the contrary, Obi and Nwagbara (2018) study found no significant relationship between the physical school environment (including infrastructure and furniture) and students' academic performance. Akinola and Adepoju (2022) research concluded that the condition of school furniture and

infrastructure had little to no impact on students' academic outcomes. Alonge and Odeleye (2023) study reported no substantial evidence linking the school physical environment to students' performance, attributing academic success more to teacher quality and teaching methods. It is important to note that the results of the relationship school physical environment (school site, school infrastructural facilities and school furniture) and students' academic performance have been inconsistent. Some researchers (Adeyemi, 2019; Ofoegbu & Asogwa, 2020; Igbokwe & Okeke, 2021) found that school physical environment is significantly related to students' academic performance. Other researchers such as (Obi & Nwagbara, 2018; Akinola & Adepoju, 2022; Alonge & Odeleye, 2023) found that there is no significant relationship between school physical environment and students' academic performance. Besides, the studies were conducted outside Anambra State and Onitsha South Local Government Area; and thus the full understanding of the relationship between the variables runs the risk of being ethnically, culturally and environmentally biased. Replication of the study in Anambra State especially in Onitsha South Local Government Area will likely clear the bias. Hence, the present study investigated the relationship between school physical environment and students' academic performance in Onitsha South Local Government Area of Anambra State.

Statement of the Problem

Students' academic performance in public secondary schools is a major concern because it reflects the quality and effectiveness of the educational system. However, the persistent poor performance of many students in internal and external examinations, such as the West African Senior School Certificate Examination (WASSCE) and the National Examinations Council (NECO), has raised questions about the factors responsible for this trend. One factor that may influence students' academic performance is the school physical environment, including the school site, infrastructural facilities, and furniture. In many public secondary schools in Onitsha South Local Government Area, schools appear to be located in noisy or inaccessible environments, while classrooms, laboratories, libraries, and other facilities are often inadequate or poorly maintained. In addition, damaged or insufficient furniture may reduce students' comfort, concentration, and classroom participation. Although a conducive physical environment is believed to enhance learning and academic achievement, there is limited empirical evidence on how these physical environment components relate to students' academic performance in public secondary schools in Onitsha South. This gap necessitated this study.

Objective of the Study

The purpose of the study was to investigate the relationship between school physical environment and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. Specifically, the study sought to:

1. find out the relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State;

2. determine relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State; and
3. ascertain the relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State.

Research Questions

The following research questions guided the study:

1. What is the relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?
2. What is the relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?
3. What is the relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?

Conceptual Review

Components of School Physical Environment

The school physical environment includes the materials conditions such as the school site, school buildings, furniture, playgrounds, hostels, classrooms, school libraries, apparatus and equipment. These components are helpful in realizing the aims and objectives of education. Proper functioning of the school depends upon the quality and adequacy of the components of the physical environment. The major components of school physical environment identified in this study are as follows:

School Site: A school site refers to the physical location and environment of a school, encompassing its facilities, layout, and surrounding community. For instance, an urban school may have limited outdoor space, influencing student engagement and physical activities, while a rural school might benefit from expansive grounds that allow for diverse extracurricular activities (Othman & Hassan, 2018). The design of school sites significantly impacts educational outcomes and student well-being. Schools with natural lighting, open spaces, and areas for collaboration foster positive learning environments, as shown by research indicating that well-designed spaces can enhance academic performance and reduce stress among students (Liu & Wu, 2023; Kwong et al., 2021). In addition, the community surrounding a school site plays a crucial role in its effectiveness. Schools located in areas with strong community support and resources often have better access to programs and partnerships that enrich the educational experience, demonstrating the importance of integrating community resources in school planning (Miller & Graham, 2019; Thompson & Bossert, 2020).

School Infrastructural Facilities: School infrastructural facilities play a crucial role in enhancing the learning environment, impacting both student engagement and academic performance. Examples include well-equipped science laboratories, libraries stocked with diverse resources, and technology hubs that facilitate digital learning. According to Ogundele and Yusuf (2023), adequate infrastructure significantly correlates with improved student outcomes and satisfaction in educational settings. Furthermore, physical facilities such as classrooms with adequate ventilation, furniture, and accessibility features contribute to effective teaching and learning processes. Research by Emetarom and Oparah (2022) highlighted that well-maintained infrastructure fosters a positive school climate, which is essential for promoting students' social and emotional well-being. Moreover, outdoor facilities like sports fields and recreational areas provide students with opportunities for physical activities, which are vital for holistic development. A study by Onukaogu and Uwadiae (2021) emphasized that schools with robust sports and recreational facilities report higher student participation in extracurricular activities, further supporting academic achievement and personal growth.

School Furniture: School furniture plays a critical role in facilitating effective learning environments. For example, ergonomic chairs and adjustable desks can enhance students' posture and comfort, promoting better concentration (Okafor & Nnadi, 2023; Ahmad & Khan, 2020). Additionally, collaborative furniture, such as modular tables and movable seating, encourages teamwork and interaction among students, fostering a dynamic classroom atmosphere (Obiekwe & Udoh, 2019; Eze & Anyanwu, 2021). Properly designed school furniture contributes significantly to student engagement and learning outcomes. Research shows that flexible furniture arrangements, like bean bags or standing desks, can cater to diverse learning preferences, ultimately improving academic performance (Amosa & Idris, 2022). Moreover, incorporating storage solutions within furniture can help keep classrooms organized and minimize distractions, allowing students to focus better on their studies (Ogundare & Olawale, 2019). The aesthetic appeal of school furniture can also impact students' emotional well-being and motivation. Colorful and inviting designs can create a welcoming atmosphere, making students feel more at ease and motivated to learn (Ahmad & Khan, 2020). Furthermore, sustainable materials used in furniture production can promote environmental consciousness among students, linking education with real-world issues (Eze & Anyanwu, 2021).

Characteristics of School Physical Environment

In these days of advancement of science and technology, school plant have come up with comfortable seating arrangements, attractive decoration, superior lighting, useful service facilities such as library, playground, classrooms and toilets etcetera. But any available place may not be suitable for schools. So, some important requirements have got to be fulfilled. Beautiful surrounding is a very important factor in generating a congenial atmosphere in the school for the development of the personality of the students. Adeyemo and Oloruntoba (2022) identified the following as the essential characteristics of school plant.

Curriculum Adequacy: School plant must provide the facilities necessary for the efficient and effective accommodation of all the required phases of the curricular, co-curricular and community activities. Schools which provide for the teaching of different subjects must have separate rooms. Modern school plant requires more space for convenient grouping of rooms. For the organization of different co- curricular activities, large area is required.

Safety and Well-being: School plant should provide comfort, healthful living and safety of students, teachers and all who will use its facilities. The site should have pleasing surrounding which gives children a safety and comfortable stay in the schools. So the school should be situated far away from the cremation ground and big canals and rivers.

Inter-functional Coordination: School plant should possess the characteristics of inter-functional coordination. Each unit or portion of the plant should be planned with respect to their mutual relationship. However, if good relationship will prevail among the members of the staff, then it will become a means to an end and they will produce significant changes in various phases of the school programmes that are desirable and to a measurable degree.

Efficiency and Utility: The school plant should be planned and assembled in a manner that will promote efficient school management. Because the quality of the educational programme is intimately related to the school plan, the size of rooms, the number of doors, windows, ventilators etc. all must be determined not by fancy but by utility.

Beauty: The entire school plant should bear cheerful, attractive and pleasant look. The surroundings of the school building should be attractive and must provide a stimulating environment for children to study and conduct co-curricular activities more effectively. Emphasis should be given on beautifying the campus through students' participation by having flowers and other decorations both inside and outside. The school plant should be aesthetically pleasing. It should be a place of attraction for the students and should keep them happy with its healthy environment.

Adaptability or Flexibility: Adaptability or flexibility is another important characteristic of a school plant. There should be ample scope for modification and extension in accordance with the needs and requirements in its planning. So the site should provide sufficient space for future expansion of the school plant.

Economy: A school plant should be economical in original cost and operation. The durability aspect should also be kept in mind from economic angle. Economy in construction of school building should be affected by using locally available materials. There is much to be said in the existing conditions not only on financial but on educational ground (Eke, 2021).

Factors Affecting the Character of School Environment

It is important to note that there are a number of factors that can possibly affect what a school environment looks like, its size, location, the relationships of instructional and non-instructional spaces and the state of repairs after construction etc. The major factors that affect the decisions on whether to have a new school plant or building and decisions on its development are well articulated by Akinola and Ojo (2020). The factors as identified by the scholars are discussed below:

Social and Economic Factors: One of the reasons for establishing schools is to cater for the social and economic needs or life of the society. Educators, educational planners, architects, other relevant professionals and local citizens are expected to take note of major developments and trends in the social and economic life of the society or communities in which they operate. It is these developments that indicate what they need to do about education and the type of school plant or school buildings which they will set up or modify. The current demand for technicians and technologists, scientists and skilled researchers in Nigeria; the tendency for almost every school leaver to aspire to enter the university; the preference of university education to polytechnic and other forms of tertiary education by school leavers; the rising unemployment rate, youth restiveness and the call or need for the street children and *Almajiris* to go to school are some of the social and economic developments in the country which should guide decisions on the development of education and the appropriate school plants. It does not suffice to design and construct facilities that address the present developments. As it is not possible to set up new school buildings or modify existing ones immediately, changes occur because of financial and other constraints. There is the need to look far into the future, predict the consequences of future developments in the social and economic life of the society and draw their implication for school plant development. The anticipated future state of the economy, for instance, will determine how much money can be invested in education, the design of the school buildings including the aesthetic features and the period for the take-off of construction work.

Educational Programme: It may have been obvious to you by now that a primary consideration in all efforts geared towards the development of school plants is the nature of the educational programme that it is to serve and how that programme is to be organised. The aims and objectives of the programme will determine the types of teaching and learning activities that will take place, the types, sizes and relationships of learning and non-learning spaces. It is the nature of the educational programme offered at an institution that makes the difference between the characters of a technical college plant and that of a grammar school, or between a primary and a secondary school plant. The curriculum offered in a secondary school, for instance, will determine the types of learning spaces to be included in a school plant. The internal structures of buildings in schools where lecture method of teaching prevail will be different from those in which practical work and experimentation are emphasized. If a school offers science subjects, there will be laboratories for the study of those subjects. If agricultural science is in the curriculum of a school, a place will be set aside on the school grounds for a school farm or garden. There will be an art room in a school where fine arts is offered. It is usual to see pieces of art work, clay models, sculptures, and other artifacts adorning different parts of such a school. If sports and games are given adequate emphasis in the curriculum of a school; there will be provision for football fields, lawn tennis and for other games and a space for sporting events. The character of a school plant is also affected by the non-instructional components of the educational programme. Schools that offer mid-day meals to their

students will have relevant facilities for that service. The same thing applies to those that provide health, guidance and counselling services to their students.

Population and School Enrolment: Before a school plant is built or an existing one expanded, there must be a need for it. The number of children and youth to be catered for is a key factor influencing this need. This number at any point in time depends on the rate of population increase in a society. Presently, the population of Nigeria is estimated at over 200 million with a growth rate of about four per cent per annum and there are no indications that this rate will decrease in the near future. The implication is that the present pressure for additional classrooms is bound to continue or even increase in future. Naturally, those communities that have few children of secondary school age will have small secondary school plants while those with large numbers will have bigger plants. Those with enough children for secondary education will, under normal circumstances, have both types of institutions. Increase in school enrolments at any level of the education system necessitates new school buildings or expansion of existing ones. The size of school enrolment in each case will reflect the numbers and sizes of the classrooms while the types and sizes of the furniture and some equipment will reflect the ages of the students.

Cultural Values: Educational programmes in different countries of the world are planned and implemented according to some cultural and religious values held highly in their societies. These values are reflected in various ways including curricular offerings with their attendant equipment and materials, the teaching methods adopted and the ways in which pupils or students are grouped for learning and other purposes. Our societal values of democracy and the attendant widening of access to education at almost every level of the educational system are likely to influence the provision and organization of education for children and youth in future. A community's value for the education of its children and youth is often indicated by the amount of care it exercises over its school plant. Such communities often respond to the maintenance needs of their schools and always ensure that it is in a functional state. A community's values of democracy and respect for children's rights also inform the efforts at providing special institutions, equipment and materials for the education of physically and mentally challenged children. Where one of the values of a community is cooperation, for instance, group work is encouraged and this necessitates the provision of large classrooms for different types of activities. Religious values and beliefs often inform the building of separate educational institutions especially at the secondary school level for boys and girls. The provision for games, recreational and other activities differ in both types of institutions. The rigid demarcation of girls' and boys' hostel areas in some co-educational boarding schools, with very high walls and no link whatsoever between the two areas, is based on religious and moral values of a community or society.

Developments in the Building Materials Industry: Some developments in the building materials industry have some impact on the design and construction of some educational facilities. New building materials appear in the market from time to time. Some of them which may be found very useful for constructing or renovating school plants include new types of bricks, fancy blocks, floor and wall tiles of various types and sizes, plastics, electrical fittings and lighting systems, roofing sheets of various types, shapes and sizes and so on. The use of these materials, if they are affordable, may not only change the look of especially old school plants, but may also convey certain advantages like prolonging the useful life of the school plant, reducing noise in the buildings, improving the ventilation, ensuring better control of light, reducing the cost of maintenance and improving the aesthetic beauty of the school buildings and other structures.



Developments in Educational Practices: Among other factors that influence the structure and appearance of school plants are the developments in the design and construction profession. No educational system is an island unto itself. Educational architects, administrators and professionals in the building industry often incorporate their ideas of what they consider attractive and affordable designs from the educational systems of other countries in their attempts at solving some of the educational problems of their own countries. In fact, it is good practice for educational planners and architects to be in constant search for the best practices in facility design and explore ways of adapting or incorporating them into their own approaches to school building design as the need arises. Developments in the use of instructional media also have their effects on the appearance and structure of school buildings. The use of radio and television presentations for instructional purposes requires spaces for small and large groups as well as for individual learning. Some new instructional materials may require special rooms with special visual and acoustic environments for correct usage. They may also require special spaces or facilities and conditions for storage. All these have their impact on the internal structures of the buildings.

Theoretical Framework

This study is anchored on Systems Theory, propounded by Ludwig von Bertalanffy (1928) and later expanded by David Easton (1938) and Peter Senge (2011). The theory views every organisation as a system consisting of several interrelated and interdependent parts or subsystems that perform specialised functions towards the attainment of common organisational goals. It posits that no subsystem can function effectively in isolation because the activities of one component influence the performance of others and, ultimately, the effectiveness of the entire system. According to Bertalanffy, a system is a complex of interacting elements whose continuous interaction and mutual dependence determine the achievement of organisational objectives. Systems Theory further maintains that all systems, including educational institutions, comprise different components performing distinct but complementary roles, with the success of the whole depending on the harmonious functioning of each part. In education, the theory provides a holistic perspective for understanding the school as an integrated system made up of various subsystems that interact with one another and with the external environment. It therefore emphasises coordination, interrelationships, interdependence and collective functioning as essential conditions for achieving educational goals and improving organisational effectiveness.

The relevance of Systems Theory to this study lies in its explanation of the school as a complex system in which the school physical environment is an important subsystem influencing the overall effectiveness of teaching and learning. Specifically, the school site, infrastructural facilities and school furniture are interdependent components whose quality and adequacy contribute significantly to creating a conducive learning environment. When these components are properly planned, provided and maintained, they enhance safety, effective resource utilisation, teaching efficiency, students' comfort and improved learning outcomes, thereby promoting better academic performance. Conversely, deficiencies in any of these components can disrupt the functioning of the school system and adversely affect students' achievement. The theory therefore provides a sound framework for explaining the relationship between the independent variable, school physical environment (school site, infrastructural facilities and school furniture), and the dependent variable, students' academic performance. It justifies the study by demonstrating that improvements in one component of the school system positively influence other components and enhance the overall attainment of educational objectives. Hence, Systems Theory is considered

appropriate for interpreting how the quality of the school physical environment contributes to improved students' academic performance in public secondary schools.

Methodology

The study adopted correlational research design. The correlational research design according to Nworgu (2021) examined the degree, patterns and strength of relationship between two or more variables to determine whether they are associated or correlated without inferring causation. The correlational design was considered most appropriate in this study because the design provided clues for the proper understanding of patterns of relationship between school physical environment and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. The population for the study comprised all the 641 Senior Secondary School (SSS II) students from the six public secondary schools in Onitsha South Local Government Area of Anambra State (Planning, Research and Statistics Department, Anambra State Post Primary School Service Commission (PPSSC), Awka, 2026). The sample size of 160 (25 percent) of the entire population of SSS II students in the six public secondary schools in Onitsha South Local Government Area of Anambra State was drawn for the study using proportionate stratified random sampling technique. Students in each the schools in the local government of the study formed a stratum from where 25% was drawn. The proportionate stratified sampling technique was applied to ensure that students from the various schools were represented in the sample as they existed in the population of the study. The instrument for data collection was a researcher-structured rating scale titled: "School Physical Environment Rating Scale (SPERS) and Academic Performance Test (APT)." The first instrument SPERS contains two sections, A and B. Section A sought background data of the respondents (students) on the school. Section B has three clusters "A-C". Cluster "A" elicited data on school site with 7-item statements; Cluster 'B' elicited data on school infrastructural facilities with 7-item statements; while Cluster C elicited data on school furniture with 7-item statements. All the Clusters "A-C" in SPERS have a total of 21-item statements with a four-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD); weighted 1, 2, 3, and 4 respectively. The second instrument "Academic Performance Score (APS)" was SS 2 students' scores in English Language and Mathematics which was collected from the English and Mathematics teachers in the respective schools. English Language and Mathematics were used for this study because it is a general and compulsory subject that determines the extent of students' academic performance. The instrument was subjected to face and content validation using three experts, two in the department of Educational Management and Policy and one in Measurement and Evaluation Unit, in the department of Educational Foundations, all in the Faculty of Education, Nnamdi Azikiwe University, Awka. The reliability was determined by administering copies of the questionnaire to 20 students in public secondary schools in Onitsha North Local Government Area of Anambra State; which was not part of the study area. The data collected from the pilot test were subjected to internal consistency reliability test using Cronbach Alpha statistical tool. The responses were analyzed, while the reliability coefficients values of 0.81 for school site; 0.84 school infrastructural facilities; and 0.89 for school furniture were obtained respectively. The direct administration method was used to administer the copies of the rating scale to the sampled respondents in their respective schools. This was done by the researchers with the help of five research assistants who were be properly briefed on the mode of administration and collection of the research instruments. This procedure made it easier for the administration and collection of the instrument to be done within two weeks. Out of the 160 copies distributed, 154 copies were returned duly completed,

and used for data analysis. This gave a return rate of 96.25%, which the researcher considered adequate for the study. Pearson Product Moment Correlation Coefficient (r) was utilized for data analysis. The (r) was used to determine the nature of the relationship between the variables of the study. The magnitude of the relationship was determined using Ifeakor (2018) guidelines, thus:

Coefficient (r)	**Relationship**
$\pm .00 - .19$	Very Weak
$\pm .20 - .39$	Weak
$\pm .40 - .59$	Moderate
$\pm .60 - .79$	Strong
$\pm .80 - 1.00$	Very Strong

All analyses were carried out using Statistical Package for Social Science (SPSS) Version 25.

Data Presentation and Analysis

The study answered the following research questions:

Research Question One: What is the relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?

Table 1: Pearson r on the relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State

Source of Variation	N	(r)	Remark
School site	154	0.538	
Students' academic performance			Moderate Positive Relationship

Results in Table 1 show that there is a moderate positive relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. This is evident in the value of Pearson's Correlation Coefficient (r), which is 0.538.

Research Question Two: What is the relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?

Table 2: Pearson r on the relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State

Source of Variation	N	(r)	Remark
School infrastructural facilities	154	0.826	
Students' academic performance			Very Strong Positive Relationship

Table 2 shows that the Pearson's (r) = 0.826, indicating that there is a very strong positive relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State.

Research Question Three: What is the relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State?

Table 3: Pearson r on the relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State

Source of Variation	N	(r)	Remark
School furniture	154	0.749	
Students' academic performance			Strong Positive Relationship

Table 3 shows that there is a high positive relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. This is shown in the value of Pearson's Correlation Coefficient (r), which is 0.749.

Relationship between school Site and Students' Academic Performance in public secondary schools in Onitsha South Local Government Area of Anambra State

The findings in Table 1 indicated that there is a moderate positive relationship between school site and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State, as reflected by the Pearson correlation coefficient of 0.538. This suggests that the location and accessibility of the school moderately influence students' academic performance and overall outcomes, meaning that students attending schools in more favorable or strategically located areas may perform better academically. The Pearson r value of 0.538, while not indicating a strong relationship, points to a meaningful impact of school location factors, such as proximity to resources, environmental safety, and reduced travel time, which can positively contribute to students' ability to focus, attend classes consistently, and achieve better results in their academic pursuits. Supporting these findings, Egbunike and Asuzu (2021) study on the impact of school location on student achievement in Enugu State found a moderate positive correlation (r = 0.542) between school site and students' performance in Enugu State, affirming that proximity to students' homes and access to resources improved academic outcomes. Similarly, Okafor and Obe (2022) research on the role of school site in academic performance in Nigeria revealed that school location is a determinant of academic success, especially in urban areas where infrastructure and resource accessibility enhanced learning (r = 0.530), with an emphasis on the ease of transportation and security around schools. Both studies highlight that while location is not the sole determinant of success, it plays a pivotal role in shaping educational experiences and outcomes.

Relationship between School Infrastructural Facilities and Students' Academic Performance in Public Secondary Schools in Onitsha South Local Government Area of Anambra State

The findings in Table 2 showed that there is a very strong positive relationship between school infrastructural facilities and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. The empirical finding that there is a very strong positive relationship between school infrastructural facilities and students' academic performance, with a Pearson correlation (r) value of 0.826, indicates that improved infrastructure in schools significantly enhances students' academic outcomes. This suggests that well-maintained classrooms, laboratories, libraries, and sanitation facilities contribute to creating an environment conducive to learning, thus allowing students to focus better, retain information, and perform well in assessments. The Pearson r value of 0.826 reflects an exceptionally strong association, implying that enhancements in infrastructure could lead to substantial improvements in academic performance. Agreeing with this study findings, Ugwulashi and Okoli (2021) conducted a study titled "school infrastructure and academic achievement of secondary school students in Owerri, Imo State" and reported a strong positive relationship (r = 0.795) between school infrastructure and students' academic performance. Correspondingly, Adewale (2022), in the study "impact of school facilities on students' learning outcomes in public secondary schools in Lagos State," found a significant correlation (r = 0.810) between quality infrastructure and student performance; further affirming that well-maintained school environments positively influence academic success by providing better teaching and learning conditions for both teachers and students.

Relationship between School Furniture and Students' Academic Performance in Public Secondary Schools in Onitsha South Local Government Area of Anambra State

The findings in Table 3 revealed that there is a strong positive relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. The empirical study's finding of a strong positive relationship between school furniture and students' academic performance in public secondary schools in Onitsha South Local Government Area (with a Pearson r value of 0.749) suggests that adequate and comfortable furniture significantly enhances students' learning outcomes. This strong correlation between the variables implies that well-furnished classrooms will promote better concentration, comfort, and participation, directly influencing students' academic success. A Pearson r value of 0.749 is considered a strong positive correlation, indicating that improvements in furniture quality are likely to result in noticeable gains in student performance. In consistent with the findings, Adejumo and Olanrewaju (2021) found that school infrastructure, including furniture, was a critical determinant of students' academic success in Nigerian secondary schools. They reported that schools with inadequate seating and desks showed lower academic performance compared to those with sufficient furniture. Another study by Eze and Nwankwo (2022) on the impact of classroom environment on students' learning outcomes in Enugu Secondary Schools also highlighted that well-structured classroom furniture improved students' concentration and engagement, positively impacting academic achievement. The study concluded that well-structured classroom furniture such as chair, desks, and tables significantly enhances students' concentration and engagement, leading to improved academic performance.

Conclusion

The study findings revealed that there is a positive relationship between school physical environment (school site, school infrastructural facilities, and school furniture) and students' academic performance in public secondary schools in Onitsha South Local Government Area of Anambra State. Thus, the study concluded that school physical environment is an important variable that impacts students' academic performance and success in public secondary schools in Onitsha South Local Government Area of Anambra State.

Recommendations

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

1. Policy makers should prioritize funding for school infrastructure improvements to enhance student performance, particularly in underserved areas with suboptimal school sites.
2. Secondary school principals should ensure regular maintenance and upgrades of school infrastructural facilities to create an optimal learning environment that boosts student academic performance.
3. Teachers should effectively utilize available infrastructural resources and encourage students to take full advantage of conducive classroom environments to improve learning outcomes.
4. Students should maximize the benefits of well-maintained school facilities and furniture by adopting disciplined study habits and active engagement in learning activities.
5. Parents should advocate for and support school improvement initiatives, particularly those focusing on infrastructural development, to ensure their children receive quality education in a conducive environment.

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