



Influence of School Infrastructure on Student's Learning in Anglican Girls' Grammar School, Awkunanaw, Enugu State

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The study evaluated the influence of school infrastructure on student's learning in Anglican Girls' Grammar School, Awkunanaw, Enugu State with the following specific objectives; to examine the influence of school infrastructure on quality education in Anglican Girls' Grammar School, Awkunanaw, Enugu State, to ascertain the influence of school infrastructure on the academic achievement of students in Anglican Girls' Grammar School, Awkunanaw, Enugu State and to determine the influence of school infrastructure on students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State. The study was guided by three research questions. The study adopted a quantitative descriptive research design. The population of the study was 1500 students across junior and senior secondary classes. Stratified random sampling technique was used to select the student samples. Descriptive statistics tools were primarily employed. Frequencies and percentages summarized demographic attributes of the sample. Mean scores evaluated attitudes by computing the average rating on Likert-scaled challenge statements. The finding revealed that School Infrastructure has positive significant influence on quality education in Anglican Girls' Grammar School, Awkunanaw, Enugu State, that school infrastructure where available influenced positively the academic achievement of students in Anglican Girls' Grammar School, Awkunanaw, Enugu State and that school infrastructure significantly influenced students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State. The study concluded that the influence of school infrastructure on student learning is undeniable. The positive impact on quality education is evident through well-designed classrooms, modern amenities, and technological integration, providing students with a conducive environment for academic excellence. The study recommended that to enhance quality education, the government should invest in modern amenities, libraries, and technology resources to create an enriched learning environment at Anglican Girls' Grammar School. This will support comprehensive educational experiences, fostering academic excellence and providing students with the tools needed for a holistic education.

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ABSTRACT

Keywords: School Infrastructure; Student's Learning; Anglican Girls' Grammar School; Awkunanaw, Enugu State

Introduction

The place of education in the advancement of a nation is so vital and cannot be overstated as it boosts individual development – cognitively, personally, socially, politically and economically. Through education, an individual attains new skills, principles, moral conducts and knowledge that influences technological and industrial world (Akinkuade & Oredein, 2021). It is through the efforts of well knowledgeable and experienced teachers that educational sector can achieve its objectives, so the roles teachers play in the lives of their learners, in educational sector, in the society and in national development at large are so enormous and vital. For these teachers to discharge their duties effectively and efficiently, educational stakeholders must ensure that essential facilities that will boost their job satisfaction are provided for them to work with as their satisfaction is likely to boost their job performance positively. Learning environment has to be made conducive for teachers and students alike if quality education is to be guaranteed, as the quality of school infrastructural facilities can largely influence teachers' decision making as to whether they stay in the profession or not. This corroborates the opinion of Nyamubi (2017) that when teachers are at school, they require a conducive workplace environment to conduct their profession effectively.

The availability of basic infrastructure and services such as school buildings, computer, laboratories equipment, classrooms, water and electricity supply, sport grounds, libraries and number of books, have a great role in improving learning achievement in schools in different countries of the world (Santika, 2021). In offering a good learning environment, physical facilities such as buildings, tables, chairs, cupboards, and writing tools are highly needed. Schools should pay attention to build and maintain infrastructures to make them more durable. The availability of school infrastructures such as classes, desks, toilets and good learning facilities in different countries worldwide have been prioritized for the intention of enhancing quality education (Nurabadi, 2020). The physical infrastructure of a school, including its classrooms, libraries, laboratories, and recreational facilities, forms the foundation upon which the educational experience is built. Over the years, there has been growing recognition of the impact of school infrastructure on students' academic performance, overall well-being, and future prospects (Barrett et al., 2019).

However, the delivery of quality education demands the availability of conducive teaching and learning environment where the physical infrastructures take part. According to Dumont, *et al.*, (2021), schools should have well equipped infrastructures, including bathrooms and classrooms which allow sanitation rather than contamination of diseases. Moreover, if school buildings are prone to be flooded by intensive rains, swept away by high winds, exposed to hazardous materials, or decaying for lack of maintenance, it hinders both teaching and learning, making it harder to produce the level of academic results that are possible in a safe and healthy building. Despite the necessity of infrastructure, its effect have not paid much yield in terms of quality education. According to Atkin (2019), it is important for the schools to have well improved physical infrastructures since having such infrastructures within and outside the classrooms will make both teachers and students comfortable in the teaching and learning process. The presence of good infrastructures also motivates students to stay in schools as the school environment becomes welcoming and attractive. This raises a necessity and comparable sense to consider educational infrastructure as a significant component to learning and achievement of the students. Therefore, the physical infrastructures should be given due consideration when planning for improving the quality of education offered in the schools. This is because they create friendly learning environment, which enhances students' school attendance, ultimately improving academic achievement (Uline & Moran, 2018).

Despite education being an important impetus for personal and national development, the quality of education offered in public secondary schools in Nigeria has remained a point of discussion for decades due to low academic achievement of the senior secondary students in the national examinations. This project sought to evaluate the current state of school infrastructure at Anglican Girls' Grammar School and explore its influence on students' learning outcomes, academic achievements, and overall educational experience. By examining the relationship between school infrastructure and student's performance, we aimed at providing insights that can inform future improvements and investments in the school's physical environment, ultimately benefiting the entire student body and promoting excellence in education.

Statement of the Problem

The quality of school infrastructure is recognized as a pivotal component of the educational environment, and it plays a fundamental role in shaping students' learning experiences and outcomes. The availability of basic infrastructure and services such as school buildings, computer, laboratories equipment, classrooms, water and electricity supply, sport grounds, libraries and number of books, have a great role in improving learning achievement in schools in different countries of the world. In offering a good learning environment, physical facilities such as buildings, tables, chairs, cupboards, and writing tools are highly needed. Schools should pay attention to build and maintain infrastructures to make them more durable.

Unfortunately, Anglican Girls' Grammar School, like many educational institutions, faces the challenge of providing and maintaining an effective and conducive infrastructure to support the diverse educational needs of its student population. The condition and design of school facilities, safety and security measures, classroom environment, and the availability of essential resources are all factors that can potentially influence how students engage with their educational pursuits.

Inadequate facilities will surely affect the smooth teaching and learning process in all schools. It is known that academic performance of each student depends to a large extent on the facilities exposed to while learning but, when they are lacking some problems are faced by the students. There are variations in the academic performance of secondary school students in Enugu state. Researchers have been trying to find out how these variations come about and what are responsible for them. The major factor that seems to contribute to poor academic performance is inadequate provision of educational facilities in schools. However, there is a pressing need to comprehensively assess and understand the extent to which the quality of school infrastructure at Anglican Girls' Grammar School affects students' learning experiences, academic performance, and overall well-being.

Purpose of the Study

The purpose of this study was to evaluate the influence of school infrastructure on student's learning in Anglican Girls' Grammar School, Awkunanaw, Enugu State with the following specific objectives;

- i. To examine the influence of school Infrastructure on quality education in Anglican Girls' Grammar School, Awkunanaw, Enugu State.
- ii. To ascertain the influence of school Infrastructure on the academic achievement of students in Anglican Girls' Grammar School, Awkunanaw, Enugu State.
- iii. To determine the influence of school Infrastructure on students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State.

Research Questions

The following research questions were raised to guide the study:

- i. What is the influence of school Infrastructure on quality education in Anglican Girls' Grammar School, Awkunanaw, Enugu State?
- ii. How does school Infrastructure influence the academic achievement of students in Anglican Girls' Grammar School, Awkunanaw, Enugu State?
- iii. What influence does school Infrastructure have on students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State?

Significance of the Study

The study on the influence of school infrastructure on students' learning at Anglican Girls' Grammar School Awkunanaw carries substantial significance at various levels, including educational, institutional, and societal. The following points outline the significance of this research endeavor:

The study aims to contribute to the improvement of the overall quality of education at Anglican Girls' Grammar School Awkunanaw, Enugu State. By identifying areas where infrastructure can be enhanced, the research can aid in creating a more conducive and effective learning environment, ultimately benefiting the academic and personal growth of students.

The evidence-based findings of this study can serve as a valuable resource for administrators, ministry of education, and all Secondary schools stakeholders in making informed decisions regarding investments in school infrastructure. It provides data-driven insights into which areas require attention and allocation of resources.

A safe and supportive school environment is essential for students' well-being. The study's findings would contribute to the creation of spaces that promote not only academic growth but also the physical and emotional well-being of students.

The project would contribute to the broader field of educational research by adding to the body of knowledge on the relationship between school infrastructure and student outcomes. It expands the understanding of how physical environments influence education.

Scope of the Study

The study was conducted exclusively within the premises of Anglican Girls' Grammar School, Awkunanaw, Enugu State, South East Nigeria. The findings and recommendations would pertain to this particular school. This study on evaluating the influence of school infrastructure on students' learning involved students, teachers, and administrators at Anglican Girls' Grammar School. Data were collected from a representative sample of these stakeholders to ensure a comprehensive assessment.

Literature Review

Conceptual Framework

School Infrastructure

School infrastructure refers to the physical facilities and resources that are essential for the operation of a school and the delivery of educational services. It encompasses the buildings, classrooms, laboratories, libraries, playgrounds, equipment, and other physical assets that support the teaching and learning process. School infrastructure is a critical component of the education system, as it provides students and educators with the necessary environment and tools to facilitate effective teaching and learning. The quality and adequacy of school infrastructure can significantly impact the educational experience, student outcomes, and overall safety within educational institutions.

Santika, Pangestu & Nurahlain (2021) define the school infrastructures as physical structures which are known as shelter for educational activities including classrooms, laboratories, workshop, teaching staff office and school administration offices, toilets, reading rooms, dispensaries, libraries, dining halls and assembly halls. Nurabad, et al. (2020) define school infrastructures as the school buildings which embrace permanent structures that includes laboratories, classrooms and libraries. Nurabad, et al (2020), said that all physical structures with in the school can also be used by the school community. All physical infrastructures in the school are grouped in the category of school physical plants. This implies that the school physical plants should be evaluated accordingly in order to make students' standard skills needed to perform the school activities.

Infrastructure facilities are simply the resources used for effective development and implementation of any educational programme of which the secondary education is no exception. These include equipment, physical facilities, which are laboratory/clinic/studio, classroom facilities and equipment, laboratories size (area per student),

safety and environmental sanitation as well as financing of the programme. Infrastructure in secondary school are those basic requirements for the attainment of the objectives of the secondary education programme (Abayomi, 2009). They are employed to enhance teaching and learning process in secondary school education. Carl (2008) and Obhuvbu (2009) categorized resources in secondary education as human and material resources. Resources in education can also include any piece of information, a piece of evidence, an activity, an idea, or a series of combination of these that a learner can be directed or turned to in the development of his ability to learn, be it anything within the environment whether they are artefacts, a person or an experience, an account or an explanation that may be of value that can assist the learner to think, understand and learn. According to Oyeniyi (2010), infrastructure are composed of all the instructional facilities and equipment needed in the workshops and laboratories. These include spaces, building and other instructional facilities, real life situations or objects from the community, abridge or representation of real objects such as pictures, models, audio recorders, video recording or using them, different types of projectors, tape recorders, television and the computer (Yadar, 2007).

Importance of School Infrastructures in Education

The school physical infrastructures like classrooms, libraries, laboratories and staff houses enhance physical learning environment that lead to the provision of technical skills and to develop qualitative and adequate aspects that are needed in the school setting (Maron & Brooth, 2007). Housing teachers and students according to the school environment, improve student's performance where teachers can get opportunity of providing special courses to those teachers that teach practical subjects through school laboratories (Watson, 2013). Sanitation facilities which comprise waste disposal, drainage and adequate water for personal hygiene, cleaned toilets and other materials used while making school infrastructures modify the level of cleanliness which attract and motivate students get improved academic performance.

The school infrastructures promote the performance of curricular and co-curricular activities provided by school. The nature and size of school infrastructures present the shape and size of classrooms. The shape and size of classrooms and availability of educational materials, change the way through which students participate in school instruction. Practical courses could not be maintained for science students in school setting without science laboratories. Therefore, the availability of school infrastructures should be supported by parents and educational stakeholders that provide their financial capacities. The extent to which school administrators perform the organizational goals depend on the combination of various variables which lead to the effective management of school infrastructures (Obi & Ezegbe, 2012).

Learning Environment: A well-designed school infrastructure fosters a positive learning environment. It provides students with a comfortable and safe space for learning, which can enhance their overall educational experience(OECD, 2009)

Access to Resources: Properly equipped classrooms and libraries are essential for students to access educational resources. Inadequate infrastructure can hinder students' access to information and materials necessary for their studies (Bebell & O'Dwyer, 2010).

Safety and Security: Ensuring the safety and security of school infrastructure is of paramount importance, as it directly impacts the well-being of students, educators, and staff. While school buildings are primarily designed to facilitate learning, they also need to be resilient and protective environments. (Lance &Loertscher, 2012).

Physical Safety: Physical safety within school infrastructure encompasses measures taken to protect students, staff, and visitors from accidents and emergencies. This includes fire safety, earthquake preparedness, and building design considerations:

Fire Safety: Schools should be equipped with fire alarm systems, fire extinguishers, and evacuation plans to safeguard against fire emergencies. Properly maintained fire safety equipment and regular fire drills are critical components of fire safety in schools(Team, 2020)

Earthquake Preparedness: In earthquake-prone areas, school buildings should be designed and constructed to withstand seismic activity. These schools often conduct earthquake drills to ensure students and staff know how to respond in the event of an earthquake (FEMA, 2021).

Safe Building Design: Properly designed and maintained buildings can prevent accidents. This includes staircases with handrails, non-slip flooring, and adequate lighting to reduce the risk of falls or other injuries (NFPA, 2021).

Security Measures: Ensuring the security of school infrastructure against external threats and unauthorized access is a vital aspect of school safety. Security measures include:

Access Control: Controlled entry systems, security personnel, or security technology can restrict access to the school premises, ensuring that only authorized individuals enter the building (USDOE, 2021).

Surveillance Systems: Schools often employ surveillance cameras to monitor the premises, deter potential threats, and provide evidence in case of incidents (NASRO, 2020).

Crisis Response Plans: Having well-defined crisis response plans in place ensures that staff and students know what to do in case of emergencies, such as intruders or other security threats (SAFE Schools, 2022).

Psychological and Emotional Safety

In addition to physical safety and security, it's essential to address the psychological and emotional well-being of those within school infrastructure:

Bullying Prevention: Creating a safe environment involves addressing issues like bullying. Schools should implement anti-bullying programs and support mechanisms for victims (StopBullying.gov, 2021).

Mental Health Support: Providing access to mental health resources and professionals within school infrastructure can help students cope with emotional challenges and stress (NAMI, 2020).

Crisis Intervention: Schools should have protocols in place for dealing with crises like student conflicts, emotional distress, and other non-physical safety concerns (NASP, 2021).

Impact on Educational Outcomes

The impact of school infrastructure on educational outcomes is a subject of considerable significance in the field of education. Educational outcomes encompass a wide range of indicators that measure the success and effectiveness of the educational process, including student achievement, graduation rates, and overall learning experiences.

Student Performance and Academic Achievement

One of the most critical aspects of educational outcomes is student performance and academic achievement. Research consistently demonstrates that school infrastructure has a profound impact on these areas:

Classroom Quality: The design, size, and resources within classrooms can significantly affect student engagement and learning. Well-ventilated, well-lit, and adequately equipped classrooms provide a conducive environment for effective teaching and learning, which in turn positively affects academic achievement (Earthman, 2004).

Technological Resources: The availability of modern technology and access to digital resources in the form of computer labs, internet connectivity, and educational software can enhance students' academic performance. Technology-rich environments support interactive learning and improve students' digital literacy, which are essential skills in the 21st century (Bebell & O'Dwyer, 2010).

Library Facilities: Well-stocked libraries with a variety of reading materials and research resources contribute to improved reading and literacy skills. Access to libraries has been linked to higher test scores and academic success (Lance & Loertscher, 2005).

Teacher Morale and Quality

The quality of school infrastructure can also have a significant impact on the morale and quality of the teaching staff, which, in turn, influences educational outcomes positively.

Teacher Retention: Comfortable and well-equipped classrooms, along with a safe and supportive school environment, contribute to teacher satisfaction and retention. High teacher turnover can disrupt the continuity of education and student learning (Ingersoll & Strong, 2011).

Teaching Resources: Adequate infrastructure like the library, laboratory etc. ensures that teachers have access to essential teaching resources and materials. This enables educators to create engaging lesson plans and deliver effective instruction (Hanushek, 2003).

Student Engagement and Well-being

A school's physical environment, including safety and security, can impact student engagement and well-being positively.

Safety and Security: Safe school infrastructure fosters a sense of security among students and reduces stress, allowing them to focus on learning. In contrast, inadequate safety measures can lead to student's anxiety and hinder their ability to concentrate (Benbenishty & Astor, 2005).

Aesthetics and Design: Attractive and well-maintained school infrastructure contributes to a positive school climate. A pleasing and clean environment can boost student motivation and create a more conducive atmosphere for learning (Earthman, 2005).

Equity in Education: Ensuring that school infrastructure is of high quality across all communities is essential for promoting equity in education. Disparities in infrastructure can exacerbate educational inequalities. Underprivileged students in poorly maintained schools may face additional barriers to success (Lafortune et al., 2018).

Students' Academic Performance

According to Nyongesa (2011), Academic achievement of students is the results of the school available infrastructure such as classrooms, libraries, sanitation facilities to facilitate the performance of class assignments, homework assignments, tests, examinations and participations. The pressure of parents and other individuals like teachers and school administrators to improve the academic performance that also help the school to come with the new updated advanced strategies like introduction of effective teaching and learning methods, instructional strategies and rewarding students for good performance so as to encourage the motivating factors in schools which tend to work more and to make improvements (Nyongosa, 2011).

The academic concepts are made to establish the participation of students and teachers in the classroom setting. Therefore, it is vital that classroom environment should be maintained and well organized (Kudari, 2016). The efficiency management of the classroom, promote the lesson delivery, instructional strategies and teaching and learning process so as to make effective discipline and communication in the classroom and also to help the students to learn better and improve their academic performance (Kodari, 2016). The school resources should be maintained and used so as to promote the academic performance in such way that school textbooks should be always updated, learning materials, hand-outs and technology should be available in the school setting and also well -organized library facilities and laboratory facilities specifically in science subjects in order to develop the school outcomes known as students' academic performance (Maina, 2010). The student will be helped to get the related learning concepts that make them to understand their focus as academic concept where students' dependent upon the library facilities in order to obtain textbooks and other material needed and well -equipped laboratories (Maina, 2010).

School Infrastructures and Students' Academic Performance

School infrastructures like school library keeps all forms of information needed to enhance and develop positive teaching and learning activities like textbooks, charts, magazines, maps, journals, newspapers, programmed textbooks and non-printed materials such as films, records, pictures and audio and also science apparatus and chemicals (National examinational research center, 2002).

According to Gidado (2010), school infrastructure like school classrooms are needed to perform various activities of school program as well as for extra-curriculum activities. School plants facilitate the implementation of teaching and learning activities so as to achieve the specific objectives of curriculum, to encourage and promote self-instruction of teachers, to present learning task of teachers and to motivate students (Agun, 2009).

The school libraries and laboratories which are equipped, serve various benefits that lead to the effective academic performance like provision of students' direct interaction with the realities found in social and physical environment, promoting the acquisition and retention of actual knowledge, simulating the interest of voluntary reading, facilitating the attitudes and behavior change and also illustrating and clarifying non-verbal symbols (Alcon, 2007).

Effects of School Infrastructures on Students' Academic Performance

The school infrastructures like co-curricular infrastructures which include music rooms and theater rooms, help the students to be engaged in the participation of various activities done in the school and develop their social and mental skills as well as being developed physically and emotionally (Nganga, 2003). The availability of effective playground and equipment, help students to search and develop their talent. Therefore, co-curricular facilities must be allocated effectively and efficiently and also structured properly for nurturing students' talents (Khaemba, 2007).

Modern approaches developed in education sector, should focus on the development of the students' academic performance (Stephens & Schaben, 2002). The effective learning achievement show that co-curricular activities should be organized and supported accordingly by the school management holder so as to enhance the student's academic outcomes in which curricular co-curricular must be balanced (Brosh, 2012).

Government Policy on Students' Academic Performance in Secondary Schools

The government goal is to make sure that all citizens are getting quality education. The development of physical and material resources are highlighted in laws and policies governing education system of the country. The students' academic performance is developed due the availability of infrastructures like school libraries and laboratories that are well equipped and maintained school classrooms and also having trained teachers. Therefore, school administrators should put much efforts on school infrastructures to be available in school setting so as to provide effective and efficient quality and quantity education since enrollment has increased (Mworio, 2013). The implementation of educational policies and improvement of the school infrastructure has reduced the problem of poor performance of the students (Mworio, 2013).

Principles for Management of School Infrastructure

In the management of school infrastructure, Stewart (2007) analogues the construction of schools like a car, in the sense that it consists of a series of components or systems. The construction of schools certainly cannot be separated from the role of management of infrastructure and its principles. Management of school facilities and infrastructure uses several principles that need to be considered so that the goals can be achieved optimally. In Barnawi & Arifin (2012) the principles are explained as follows:

1. Building land and equipment for school furniture must portray the mind and image of the community as stated in the philosophy and purpose of education.
2. Planning of building land, and equipment for school furniture should be a picture of shared desires and with consideration of a team of experts who are quite competent in the community.

3. Building land and equipment for school furniture should be adapted adequately for the interests of students, for the sake of the formation of characters who can serve and guarantee that they will learn, act and play according to their talents.
4. Building land and equipment for school furniture and tools, should be adapted to the interests of education that come from interests and virtues or benefits for students and
 1. teachers.
5. As the person in charge must help the school program effectively, train mentors and choose tools and how to use them so that they can adjust themselves in carrying out their duties according to their functions and profession.
6. A person in charge of a school must have the skills to recognize, both qualitatively and quantitatively and to properly use the functions of the building and its equipment.
7. As the person in charge must be able to maintain and use the building and surrounding land so that it can help realize health, safety, comfort and the beauty and progress of the school and the community.
8. As the person in charge, the school not only knows the wealth of the school entrusted to it, but must pay attention to all the educational tools needed by the students.

Theoretical Framework

Social Learning Theory:

Albert Bandura's theory posits that individuals learn from observing others, emphasizing the role of modeling, imitation, and observational learning.

Social Learning Theory, proposed by Albert Bandura in 1963, posits that individuals learn by observing others and imitating their behavior. The theory emphasizes the role of modeling, reinforcement, and observational learning in shaping human behavior. Bandura introduced several key tenets:

Observational Learning: Individuals learn by observing others and the consequences of their actions. This includes both positive and negative reinforcement.

Modeling: The theory underscores the influence of role models and the impact of imitating behaviors exhibited by those in one's environment.

Vicarious Reinforcement: Observing others being rewarded or punished for certain behaviors influences an individual's likelihood of engaging in similar behaviors.

Reciprocal Determinism: Bandura introduced the concept that behavior, environment, and personal factors interact dynamically, shaping each other over time.

Self-Efficacy: The belief in one's ability to succeed in specific situations is a central tenet. Bandura argued that individuals are more likely to engage in behaviors for which they have high self-efficacy.

Social Learning Theory has had a profound impact on psychology and education, shaping our understanding of how individuals acquire new behaviors and skills through social interactions and observations. In the context of school infrastructure, students may learn behaviors and attitudes related to the learning environment by observing peers, teachers, and the physical surroundings.

Applying Social Learning Theory to the study of the influence of school infrastructure on student learning at Anglican Girls' Grammar School in Awkunanaw, Enugu State involves examining how students observe, imitate, and learn from their social environment. According to Albert Bandura's theory, individuals learn not only through direct experiences but also by observing others, modeling their behaviors, and evaluating the consequences of those behaviors.

In the context of school infrastructure, students at Anglican Girls' Grammar School may observe how their peers and teachers interact with and respond to the physical learning environment. Positive models, such as teachers utilizing modern technological resources or engaged students thriving in well-equipped classrooms, can influence others to

adopt similar behaviors. This observational learning process can impact students' attitudes towards their learning environment, influencing their engagement, motivation, and overall academic performance. Moreover, the theory's concept of self-efficacy is relevant. The availability of quality infrastructure may enhance students' belief in their ability to succeed academically, fostering a positive learning environment. By considering Social Learning Theory in this study, researchers can gain insights into the social dynamics and observational processes that contribute to the relationship between school infrastructure and student learning outcomes at Anglican Girls' Grammar School, Awkunanaw, Enugu state.

Empirical Review

The Influence of School Infrastructure on Student Learning Activeness: A Research Study (Rahmanullah et al., 2021), researched on "An Evaluation of Educational Facilities and Infrastructure in Vocational High School. The work noted that Educational facilities and infrastructure are used to facilitate students' understanding of the subject matter delivered by using appropriate educational facilities and infrastructure in teaching and learning programs to be more effective and efficient. The primary purpose of this study was to determine the availability, completeness, and condition of educational facilities and infrastructure and also to find out if the existing facilities and infrastructures already compatible the specified standards. The standard used is standards of Education Ministry Decree No. 40 of 2008 and architectural standards taken from several literatures. The research method is a descriptive evaluative method and uses a qualitative approach. From the observation it was found that the existing educational infrastructure is almost completely in accordance with the established standards, while in educational facilities there are still some facilities that have not met such as lack of educational equipment, educational media, other equipment and incompatible furniture with architectural standards.

Hanaysha et al., (2023), worked on Impact of classroom environment, teacher competency, information and communication technology resources, and university facilities on student engagement and academic performance. The objective of this research was to determine the impact of classroom environment, teacher competency, information and communication technology (ICT) resources, and university facilities on academic performance and student engagement at higher education institutions (HEIs). This paper also aimed to contribute to the literature by verifying the mediating effect of student engagement between the selected factors and academic performance. A survey tool was used to gather the data from 314 students in United Arab Emirates. During the phase of data analysis, AMOS Version 21 was utilized to test the proposed hypotheses and validate the research tool. The results supported the notion that teacher competency and ICT resources have positive effects on both academic performance and student engagement. Furthermore, classroom environment and university facilities were found as significant predictors of both academic performance and engagement. Finally, the results showed that student engagement mediates the relationship between the stated factors and academic performance.

Yangambi, (2023), worked on Impact of School Infrastructures on Students Learning and Performance: Case of Three Public Schools in a Developing Country. The study identified that in several countries, low level of education is due to inadequate level of physical facilities. Physical facilities provide students with adequate atmosphere conducive to learning. Modern physical facilities are important and have positive effects on students learning and performance (Shami & Hussain, 2005). School facilities are a major factor in ensuring quality education. This is one of the criteria for measuring education's growth and development level. Recent studies conducted in the United Kingdom have shown the impact of infrastructure on learners' academic outcomes and explain 16% of the variation in primary school students' academic achievement (Teixeira et al., 2017). This study aimed to determine the impact of school infrastructure on student learning and achievement in three schools in the Kinshasa-Ngaliema education division. This study was the subject of quantitative research to analyze data collected from a questionnaire designed specifically for this study and based on the literature that addresses the impact of school facilities on student achievement. The target population (N = 108) was identified as teachers from three official secondary schools in the Kinshasa-Ngaliema education division. The accessible population was selected based on research interest, based on the non-probability sampling known as convenience sampling. The results of this study highlight several important observations that are critical to determining that school infrastructure has a serious impact on student learning and achievement. The results of this study suggest that continuous improvement of school infrastructure should be considered and recommended for all schools to optimize student achievement and teacher delivery.

Aneke, (2022), investigated the Influence of Learning Environment on the Academic Performance of Secondary School Students in Makurdi Metropolis. The population of this study comprised 2, 090 secondary school students from which 399 were selected randomly from 30 secondary schools in Makurdi. A 15-item structured questionnaire developed by the researcher titled the Influence of Learning Environment on the Academic Performance of Students" (ILEAPS) was used for data collection. Mean and standard deviations were used to answer the research questions. The results of the study revealed adequate provision of infrastructures makes students learn with ease thus bringing about good academic achievement (3.82), poor and inadequate physical facilities, obsolete teaching techniques, overcrowded classrooms leads to poor academic achievement of students (3.67), unattractive school buildings and overcrowded classrooms contributes to poor academic achievement of the students in secondary school (3.60). The study also revealed that what happens outside school also affects learning progress (3.45), students from home that has educational facilities perform greater in school than those whose parent do not (3.43) and parental occupational status affects students' academic performance (3.38). The study further revealed that indiscipline among teachers results to retarding students' academic performance (3.50) and students who are taught by trained professional teachers perform better than those untrained professional teachers (3.42). The study concludes that learning environment influences the performance of students. Based on the findings, the study recommends that Benue State Government should provide adequate school facilities in secondary schools to enhance teaching and learning processes. The Parent Teacher Association (PTA), philanthropist and other charitable organizations are also implored to compliment the effort of the government to boost academic achievement of secondary school students by contributing to modern learning infrastructures to schools.

Nugroho & Wibowo, (2020), investigated the Influence of School Infrastructure on Student Learning Activeness: A Research Study. The study pointed out that implementation of learning should ideally not only pursue learning outcomes but also pay attention to student learning process. Student's activities and creativity are developed through various interactions and learning experiences. As a basic element of learning that needs to be developed is student learning activeness. School infrastructure is a facility that influences student learning so that it can run optimally. This study discusses that school infrastructure can affect student learning activeness. This study explains the influence of school infrastructure in learning, the development of school infrastructure in improving learning outcomes and their utilization in order to increase the intensity of student learning activeness which include physical and psychological involvement.

Yangambi (2023), worked on The Influence of School Infrastructure on Student Learning Activeness: A Research Study. The work noted that implementation of learning should ideally not only pursue learning outcomes but also pay attention to student learning process. Students' activities and creativity are developed through various interactions and learning experiences. As a basic element of learning that needs to be developed is student learning activeness. School infrastructure is a facility that influences student learning so that it can run optimally. This study discusses that school infrastructure can affect student learning activeness. This study explains the influence of school infrastructure in learning, the development of school infrastructure in improving learning outcomes and their utilization in order to increase the intensity of student learning activeness which include physical and psychological involvement.

Puspita & Sugiyono (2021) worked on Strategies to Improve Education Quality at Junior High Schools. The study aimed to introduce education practitioners and the general public to the strategies that schools have undertaken to improve the quality of education. This research used qualitative methods to explore existing phenomena. The research was conducted at one of the junior high schools in South Sulawesi, Indonesia. The data were collected through semi-structured interviews whose questions were developed after being in the field. The data were processed using qualitative data analysis techniques. Source triangulation was carried out with three teachers. The results showed that there were strategies that were considered effective in improving the quality of education. This quality improvement was indicated by the good student output and the trust of the community who considered the school to be one of their favorite schools in the area; through this quality improvement, the school became an example for others. Some of the strategies that were considered effective were implementing student-centered learning, increasing the number of high achieving new student admissions, strengthening human resources, providing educational rewards, and learning outside the classroom.

Adeyanju (2018) conducted a study to investigate the perceptions of parents towards construction of physical resources in primary school the Nigeria with the targeted population of 450 respondents and cross-section design was applied to the study. The study found that parents and community generally have a significant role in promoting the availability of school resources through construction in case of financial assistance or manpower utilization. The findings by Adeyanju (2018) have shown that it is important for both teachers and students to be supplied with adequate physical infrastructures for effective teaching and learning to take place.

Mabeyo (2016) on his study about the influence of school infrastructure on academic performance in public primary schools in Nzega District Tabora, cross-sectional design was used to get a total sample size of 115 respondents in which simple randomly for the students, purposive technique for teachers as well as educational officers. Mabeyo (2016) argues that there is a shortage of school infrastructure in most of schools such teachers' houses, classrooms, toilets and desks in primary schools this led to the poor academic performance among students in public primary schools. The problem of educational infrastructure in primary schools accelerates to secondary schools and become the alarming issues countrywide. The shortage and conditions of infrastructure in schools are causing miseries in learning and performance of the students.

Fuller (2020) based on his study done in Lesotho under the title Analysis of the Availability of School Facilities and Infrastructure as an Effort to Accelerate School Quality Improvement, whereby study used a qualitative approach with a multisite research design. The total number of respondents was 190 from the targeted population of 2390. The findings were identified as school library as an instructional resource which may significantly influence pupils' achievement after controlling for pupils' family background. He found that effect of library size and its activity have been positive in 15 out of 18 analyses. Also, in his study on the relationship between instructional facilities and academic performance discovered that library correlates with academic achievement and those schools with well-equipped library normally maintain high academic performance.

Thompson (2016) conducted a study based on how students fail science subjects in secondary school in Tanzania. Mixed research design was used to accomplish a sample size of 230 respondents. Interview and questionnaire as well as observation were used as data collection instruments, also simple randomly and judgmental sampling techniques were applied to the study. The findings note that electronically related teaching-learning materials are expensive to purchase, maintain and operate. The findings reveals that the situation is more serious in developing countries, such as Tanzania where a dilemma occurs as to whether to furnish the concerned schools with inputs or arrest some social or economic maladies such as unemployment, diseases or poor communication channels first.

Bakari et al., (2020) carried out a study on effects of physical facilities on performance in Kenya Certificate of Secondary Examination in public schools in Bungoma. The study used 190 sample size with targeted population of 3480 from 7 selected schools, mixed design was also used, selection of respondents based on simple randomly and purposive technique, interviews and questionnaire applied during data collection. The study found that the academic performance of schools with adequate physical facilities has been improving over the years steadily while performance in schools that have inadequate physical facilities, in Kenya Certificate of Secondary Education (K.C.S.E) fluctuated with time despite new reforms and innovations that have been designed and introduced to make education relevant to socio-economic and political aspirations and expectations of the society at large.

Santika (2021) conducted a study in Indonesia on management of school facilities and infrastructure in improving education quality. In his study he found that school facilities such as water and electricity supply, sport grounds, labs as well as libraries and number of books, and computers to a large extent affect the ability of students in learning activities, and influence teachers to retain their works.

Barrette and Treves (2018) conducted a study in the U.S.A on the impact of school infrastructure on learning. On their study they revealed that, effective investment on school facilities achieved higher results and quality education, lack of infrastructure which support students and teachers such as buildings, toilets, potable water, sanitary drains, electricity and other service cause violence, discriminations and limited opportunity to learn.

Sheema and Kayani (2019) conducted a study on the impact of physical facilities to improve teaching learning process in Kashmir. In their study, they found that physical facilities such as playgrounds, water facilities, electricity facilities

and libraries stimulate student's interest in learning. Also, the study revealed that management and provision of proper physical facilities stimulates academic achievement of the students.

Methodology

Research Design

The study adopted a quantitative descriptive research design to comprehensively investigate and describe the influence of inadequate infrastructure of the school, including its classrooms, libraries, laboratories, and recreational facilities, which forms the foundation upon which the educational experience is built. A quantitative descriptive research design allows the researcher to systematically collect quantifiable data on variables of interest through structured research instruments in order to describe patterns in the population studied (Mann, 2003). This research sought to provide an accurate portrayal of the nature and extent of challenges faced as a result of inadequate infrastructure in Anglican Girls' Grammar School Awkunanaw.

Area of the Study

The study was conducted in Anglican Girls' Grammar School, Awkunanaw in Enugu South Local Government Area of Enugu State, Nigeria.

Population of the Study

For this research, the population consists of all the students enrolled in Anglican Girls' Grammar School. This includes students from all grade levels, as well as students from diverse backgrounds, age groups, and academic abilities who were attending the school during the period of the study. The population encompassed the entire student body of the school.

According to records obtained from the school administrator's office in September 2023, the school has a student enrolment of 1500 across junior and senior secondary classes that were distributed among 50 classrooms.

Sample and Sampling Technique

Given that the total student population was 1500, a sample size of 150 students accounting for 10% of the target population was chosen to ensure adequate representation while being feasible.

Stratified random sampling technique was used to select the student samples. Stratified random sampling involves dividing the population into mutually exclusive, homogeneous subgroups and then randomly selecting the required number of samples from each stratum (Creswell & Creswell, 2018).

Instrument for Data Collection

To gather relevant data pertaining to the research variables, a structured, self-administered questionnaire was designed by the researcher as the primary data collection instrument. The researcher constructed a questionnaire titled "Influence of School Infrastructure on Student's Learning in Anglican Girls' Grammar School, Awkunanaw, Enugu State." (ISISLAGGSA). The questionnaire was divided into two main sections -

Section A: Demographic Profile

This section contained 5 items seeking background information about the respondents' name, gender, age, class, email address. Closed response options facilitated coding and analysis.

Section B: Perceptions of School Infrastructure

This section comprised 15 questions exploring the extent and nature of the school infrastructure. A 4-point Likert scale ranging from 1= Strongly Disagreed to 4= Strongly Agreed was used with participants indicating their level of agreement with each question.

The inclusion of positively and negatively worded items helped to minimize bias from acquiescence responding. Items were informed by an extensive literature review on issues influencing teaching-learning processes in large

classes and consultation with subject experts. The statements covered various aspects like inadequate facilities, lack of individual attention, difficulty enforcing student engagement, inability to cater to diverse learning needs and ineffective assessment practices.

Validation of the Instrument

To establish the questionnaire's validity or ability to accurately measure the concepts being assessed, it was subjected to scrutiny from two research experts in Measurement and Evaluation in Enugu State College of Education Technical with at least 15 years of experience each in instrument development and mixed-methods studies. Their expertise helped to ensure:

Content validity by evaluating if items fully represent the problem domain and research objectives.

Face validity by assessing items for logical flow, understandability, relevance, clarity of instructions and response options.

Based on their feedback, minor changes were made like rephrasing some statements for improved clarity, rewording demographic options to be more comprehensive and adding scales to close-ended items. The revised questionnaire was then pre-tested with 5 teachers not involved in the main study

Reliability of the Instrument

In testing for reliability, Cronbach’s Alpha (x) was used. The scores were used to calculate the variance. The coefficient of reliability was 0.82.

Method of Data Analysis

All quantitative data obtained through closed-ended questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics tools were primarily employed. Frequencies and percentages summarized demographic attributes of the sample. Mean scores evaluated attitudes by computing the average rating on Likert-scaled challenge statements. Group means enabled comparison of perceptions across various student background characteristics. Standard deviation gauged the dispersion of responses from the mean. Data consistency checks ensured response quality before conducting inferential analysis. The decision rule used in study was based on the Likert scale responses: SA= Strongly Agree (4), A= agree, (3), D= Disagree (2), SD= Strongly Disagree (1). This implies that any mean values ranging from 2.5 and above falls on Agreed while mean values ranging from 1-2.49 falls on Disagreed.

Presentation of Result

This chapter presents and describes the results of the study.

Research Question One: What is the influence of school Infrastructure on quality education in Anglican Girls’ Grammar School, Awkunanaw, Enugu State?

Table 1: Table one presents the assessment of the influence of school Infrastructure on quality education in Anglican Girls’ Grammar School, Awkunanaw, Enugu State

S/N	Item	SA	A	D	SD	MEAN	REMARK
1	Classroom Conditions such as well-ventilated and well-equipped classrooms helps on student concentration.	70	25	25	15	2.9	Agreed
2	Beyond academics, safe and healthy school environments positively impact student attendance and overall well-being.	66	24	30	15	3.0	Agreed
3	Quality infrastructure enhances teacher effectiveness, providing them with conducive work environments and tools for innovative teaching	77	26	20	12	3.2	Agreed

4	Adequate sports facilities and recreational spaces not only promote physical well-being but also contribute to student engagement.	81	16	25	13	3.2	Agreed
5.	Well-designed classrooms, equipped libraries, and modern technological resources foster an atmosphere conducive to academic excellence.	51	45	20	19	2.9	Agreed
	Grand Mean					3.8	

Table 1 presents the view of the respondents on the assessment of the influence school Infrastructure on quality education in Anglican Girls’ Grammar School, Awkunanaw, Enugu State.

The mean of the item affirmed that Classroom Conditions such as well-ventilated and well-equipped classrooms helps on student concentration (2.9), beyond academics, safe and healthy school environments positively impact student attendance and overall well-being (3.0), quality infrastructure enhances teacher effectiveness, providing them with conducive work environments and tools for innovative teaching (3.2), adequate sports facilities and recreational spaces not only promote physical well-being but also contribute to student engagement (3.2), and well-designed classrooms, equipped libraries, and modern technological resources foster an atmosphere conducive to academic excellence (2.9). The grand mean of 3.8 is a strong indication that the presence of school Infrastructure has positive significant influence on quality education in Anglican Girls’ Grammar School, Awkunanaw, Enugu State

Research Question Two: How does school Infrastructure influence of the academic achievement of students in Anglican Girls’ Grammar School, Awkunanaw, Enugu State?

Table 2: Table two shows how school Infrastructure influence of the academic achievement of students in Anglican Girls’ Grammar School, Awkunanaw, Enugu State

S/N	Item	SA	A	D	SD	MEAN	REMARK
1	Well-designed classrooms with modern amenities provide a conducive environment for focused learning, enhancing student academic achievement	70	30	15	20	3.1	Agreed
2	Libraries stocked with resources and laboratories equipped with the latest technology empower students to explore and apply theoretical concepts, contributing to a deeper understanding of subjects	80	20	15	20	3.2	Agreed
3	The availability of modern and well-equipped classrooms positively impacts students' academic performance	75	15	30	15	3.1	Agreed
4	Accessible technological infrastructure facilitates interactive and innovative learning experiences help the student to achieve higher	75	35	15	10	2.8	Agreed
5	In essence, quality school infrastructure creates an atmosphere that inspires and supports students on their academic journey, laying the foundation for enhanced academic achievement	80	10	30	15	3.1	Agreed
	Grand Mean					3.8	

Table 2 two shows the mean distribution on the opinions of the respondents on how school Infrastructure influence the academic achievement of students in Anglican Girls’ Grammar School, Awkunanaw, Enugu State.

According the criterion mean value, the result revealed that Well-designed classrooms with modern amenities provide a conducive environment for focused learning, enhancing student academic achievement (3.1), that Libraries stocked with resources and laboratories equipped with the latest technology empower students to explore and apply theoretical concepts, contributing to a deeper understanding of subjects (3.2). The table further showed that the availability of modern and well-equipped classrooms positively impacts students' academic performance where the mean score is 3.1. The study affirmed that accessible technological infrastructure facilitates interactive

and innovative learning experiences help the student to achieve higher with mean score 2.8 and that In essence, quality school infrastructure creates an atmosphere that inspires and supports students on their academic journey, laying the foundation for enhanced academic achievement where the mean score is 3.1.

Going by the grand mean of 3.8, it is well established that school Infrastructure where available influenced the academic achievement of students in Anglican Girls’ Grammar School, Awkunanaw, Enugu State.

Research Question Three: What influence does school Infrastructure have on students’ classroom engagement in Anglican Girls’ Grammar School, Awkunanaw, Enugu State?

Table 3: Table 3 presents how school Infrastructure influence students’ classroom engagement in Anglican Girls’ Grammar School, Awkunanaw, Enugu State

S/N	Item	SA	A	D	SD	MEAN	REMARK
1	Comfortable seating arrangements, proper lighting, and an organized layout contribute to a positive atmosphere that encourages students to focus on the lesson	60	35	25	15	2.9	Agreed
2	Well-designed and adequately equipped classrooms provide an environment conducive to engagement and participation.	75	35	15	10	3.2	Agreed
3	Access to modern technological infrastructure, such as interactive whiteboards or multimedia resources, enhances the variety and dynamism of instructional methods, capturing students' attention and fostering active participation	40	60	15	20	2.9	Agreed
4	Classrooms with proper ventilation and temperature control contribute to the physical comfort of students, creating an environment where they feel more motivated to engage in learning activities	50	35	21	9	2.6	Agreed
5	The availability of resources, such as textbooks, teaching aids, and educational materials, supports effective teaching, providing students with the tools they need to actively participate in discussions and activities.	70	25	20	20	3.1	Agreed
	Grand Mean					3.7	

Table 3 presents the opinion of the respondents on the influence of school Infrastructure on students’ classroom engagement in Anglican Girls’ Grammar School, Awkunanaw, Enugu State.

Base on the criterion mean, students agreed that Comfortable seating arrangements, proper lighting, and an organized layout contribute to a positive atmosphere that encourages students to focus on the lesson (2.9), data in item two showed that well-designed and adequately equipped classrooms provide an environment conducive to engagement and participation with the mean score of 3.2. Item three showed the mean score of 2.9 which is an indication that access to modern technological infrastructure, such as interactive whiteboards or multimedia resources, enhances the variety and dynamism of instructional methods, capturing students' attention and fostering active participation.

Moreover, item four which has the mean score of 2.6 clearly showed that Classrooms with proper ventilation and temperature control contribute to the physical comfort of students, creating an environment where they feel more motivated to engage in learning activities while the mean score in item four with 3.1 affirmed that The availability of resources, such as textbooks, teaching aids, and educational materials, supports effective teaching, providing students with the tools they need to actively participate in discussions and activities.

The grand mean of 3.7 is a strong indication that school Infrastructure significantly influenced students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State.

Summary of Findings

The following are the findings from the study:

- i. The finding revealed that School Infrastructure has positive significant influence on quality education in Anglican Girls' Grammar School, Awkunanaw, Enugu State.
- ii. The finding indicated school Infrastructure where available influenced positively the academic achievement of students in Anglican Girls' Grammar School, Awkunanaw, Enugu State.
- iii. Lastly, it was discovered that school Infrastructure significantly and positively influenced students' classroom engagement in Anglican Girls' Grammar School, Awkunanaw, Enugu State.

Educational Implication

The educational implications of the influence of school infrastructure on student learning at Anglican Girls' Grammar School in Awkunanaw, Enugu State, Nigeria, are profound. The positive correlation between well-designed classrooms, modern amenities, and academic performance suggests that continued investment in infrastructure can significantly elevate educational outcomes. Policymakers should prioritize the maintenance and enhancement of physical and technological infrastructure to create an environment that fosters student engagement and achievement. Furthermore, the study underscores the importance of technological integration in classrooms, emphasizing the need for schools to keep pace with advancements to prepare students for the challenges of the modern world. Adequate investment in libraries, laboratories, and technology resources ensures that students have the tools and resources necessary for comprehensive learning experiences. The educational implications extend beyond academic success to encompass holistic student development. Comfortable and safe school environments positively impact attendance rates and overall well-being, highlighting the importance of considering infrastructure as a key determinant of the quality of education. In conclusion, the educational implications emphasize the critical role of school infrastructure in shaping a conducive and effective learning environment, urging educational authorities to prioritize infrastructure development as a strategic initiative for sustained and enhanced educational outcomes at Anglican Girls' Grammar School and similar institutions across Nigeria.

Conclusion

In conclusion, the study conducted at Anglican Girls' Grammar School in Awkunanaw, Enugu State, Nigeria, affirms the undeniable influence of school infrastructure on student learning. The positive impact on quality education is evident through well-designed classrooms, modern amenities, and technological integration, providing students with a conducive environment for academic excellence. The study further establishes a direct correlation between school infrastructure and student achievement, emphasizing the pivotal role of well-equipped libraries, laboratories, and modern technology in elevating academic performance. Moreover, the positive influence of infrastructure on student engagement underscores the importance of creating a dynamic and stimulating learning environment. These conclusive findings underscore the imperative for sustained investment in school infrastructure as a strategic approach to fostering holistic student development and ensuring continued academic success at Anglican Girls' Grammar School and similar educational institutions in Nigeria.

Recommendations

The following were hereby recommended

1. To enhance quality education, the government should invest in modern amenities, libraries, and technology resources to create an enriched learning environment at Anglican Girls' Grammar School. This will support comprehensive educational experiences, fostering academic excellence and providing students with the tools needed for a holistic education.

2. To improve student achievement, school authorities should prioritize the maintenance and expansion of well-equipped classrooms and laboratories to sustain the positive correlation between school infrastructure and academic achievement. Ensure that students have access to cutting-edge resources, empowering them to excel in their studies.
3. To foster student engagement, teachers and school management should promote a dynamic and stimulating learning atmosphere by investing in comfortable and technologically advanced classrooms. Prioritize the creation of spaces that encourage student participation, ensuring that infrastructure positively contributes to the overall engagement and enthusiasm of students in their educational journey.

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