
Optimizing School Facilities to Enhance Learning Outcomes among Secondary School Students in Bayelsa State

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ABSTRACT

This study adopted a descriptive survey design, involving a total of 1,500 participants, which included 50 school principals and 1,450 teachers. The sample was selected using simple random sampling techniques. Data related to the research questions were analyzed using frequency counts, percentages, and mean, while the Pearson Product Moment Correlation was employed to test the hypothesis at a 0.05 significance level. The findings revealed that both school facility management and student learning outcomes were relatively high during the study period. Additionally, the study established a strong correlation between school facility management encompassing aspects such as school site design, instructional space management, and classroom management and students' learning outcomes. Based on these findings, it is recommended that the government continue to prioritize the management of school facilities, particularly in the areas of school site design, classroom management, and instructional space management, to further enhance students' learning outcomes.

1. Introduction

The effective management of school facilities, including school sites, instructional spaces, administrative areas, restrooms, and circulation spaces, plays a pivotal role in the educational process. The location, design, and infrastructure of a school significantly influence how these spaces contribute to instructional delivery and student learning outcomes. Properly managed school facilities—covering aspects such as location, structure, and amenities—are crucial in fostering effective teaching and learning processes, ultimately enhancing students' academic performance.

Oyesola (2007) highlighted that the core objective of school facility management is to achieve pre-determined educational goals, emphasizing its critical role in improving students' learning outcomes. Well-designed school buildings and infrastructure not only facilitate better school programs but also address the needs of the surrounding community by creating a safe and conducive environment for students and teachers. This, in turn, enhances both the quality and quantity of education provided.

Research has consistently established a strong link between school infrastructure and students' academic success. Studies by Nwagwu (1978) and Ogunsaju (1980) demonstrated that physical facilities and the overall learning environment directly influence the quality of education students receive. Educational and extracurricular activities

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alike rely on a range of physical resources, including sports fields, landscaped grounds, furniture, restrooms, lighting, and specialized facilities for students with disabilities. Additionally, modern features such as ICT tools, security systems, transportation, and food services are essential for creating a comprehensive learning environment.

Fenker (2004) noted that facilities management ensures the operational efficiency of an organization's physical and technological systems. This multidisciplinary field integrates business administration, architecture, and behavioral and engineering sciences to align the physical workspace with employees' tasks and organizational goals. In educational settings, scientific approaches to planning and decision-making are employed to create physical learning environments that align with institutional goals. These decisions encompass the establishment of new schools, the design and construction of facilities, the renovation of existing infrastructure, and the maintenance and modernization of equipment for both academic and non-academic activities. By systematically addressing these aspects, schools can ensure that their facilities support educational excellence and foster student success.

1.1 Concept, Nature, and Types of School Facilities

The primary objective of schools is to educate students and promote their overall development. Achieving this goal requires effective utilization of both human and material resources. Among the material resources, school facilities refer to the physical infrastructure provided to students and staff to enhance the quality of teaching and learning. The recognition that learning occurs not just within the classroom but also through exploration and interaction with the surrounding environment has led to the development of more creative and innovative learning spaces. In an ever-evolving society, educational institutions must adapt accordingly. Schools serve as centers that absorb human and material resources, process them, and return them to society in the form of skilled individuals. The quality of these facilities is directly linked to the quality of education and the outcomes produced.

Facility management involves the planning, organization, decision-making, and coordination of resources necessary to create and maintain an optimal learning environment. As educational goals expand in response to socioeconomic development, the need for diverse perspectives in managing school facilities has become more evident. Involving multiple stakeholders in the management process ensures that new ideas and perspectives are incorporated, leading to better outcomes for the school community. Collaborative approaches are crucial to maximize the potential of school facilities in achieving educational objectives.

The quality of available facilities directly influences student learning outcomes and performance. Teachers face significant challenges in their roles when essential facilities such as classrooms, chairs, tables, and laboratories are lacking or inadequate. Similarly, students' learning experiences are hindered when key resources are unavailable. Ajayi (2007) emphasized that while great levels of student learning can be achieved, poor school facilities, such as poorly located schools or those with inadequate ventilation and space, can undermine educational outcomes.

In this study, "student learning outcomes" refers to the cognitive, emotional, and psychomotor results students achieve after completing their secondary education. Low academic performance, often seen in both internal and external assessments, is frequently attributed to poor learning environments. Studies by Dada (1987), Enaesator (1995), Ajayi (1999), and Akubuiro and Joshua (2004) highlight a concerning trend in the poor performance of students in the West African Examination Council (WAEC) Senior School Certificate Examination (SSCE). Additionally, secondary schools are plagued by issues such as indiscipline, absenteeism, and engagement in criminal activities like drug use, cultism, and other forms of academic malpractice. Oladele (2003) argues that the prevalence of criminal behaviors within schools reflects deeper moral deficiencies among students, which are exacerbated by inadequate facilities.

The lack of basic skills, such as proficiency in English, technical skills, and effective communication, has also been identified as a major issue in Nigerian secondary schools (Nwangwu, 2005). These deficiencies often reflect broader systemic issues, including insufficient resources in schools, particularly those serving students from low-income families. Effective school facilities management—ranging from site selection to the design of instructional, administrative, and circulation spaces—plays a critical role in enhancing teaching and learning.

The importance of properly managed school facilities in fostering a successful curriculum cannot be overstated. Schools must carefully plan and maintain their physical infrastructure to improve student learning outcomes.

Unfortunately, some schools face challenges such as poor topographical conditions, noisy environments, or inadequate facilities, which can significantly impact students' ability to concentrate. Research by Lemaster (1998) found that schools with lower external noise levels had higher student success rates, while noisy environments were associated with lower student satisfaction.

Similarly, studies by Bankole (2003) and Osiki (2004) found no correlation between school location and educational outcomes. However, Rogoft (1961) demonstrated that a school's location could directly influence learning outcomes. Many schools struggle with inadequate instructional spaces, which are crucial to the teaching and learning process. Poorly designed classrooms, a lack of laboratories, libraries, and technical workshops, as well as inadequate ventilation and malfunctioning heating systems, have been shown to negatively impact academic performance (Stricherz, 2000).

Kennedy (1999) further emphasized that the development of classroom spaces should align with students' developmental needs and the curriculum, directly affecting learning outcomes. Administrative spaces and areas of convenience, such as restrooms and hallways, also play an essential role in the overall functioning of a school. Poor organization or maintenance of these spaces can disrupt the educational process.

Moreover, poorly designed circulation spaces, such as playgrounds and outdoor activity areas, can also hinder student behavior and attitudes. PEB Exchange (1998) found a direct correlation between the quality of school playgrounds and students' learning outcomes. Many schools lack adequate facilities for both outdoor and indoor activities, affecting students' overall development and academic performance. If not addressed, this imbalance can detract from the quality of the teaching and learning process. The insufficient provision of physical facilities for academic and extracurricular activities has been a longstanding concern for school administrators. This issue is complex and time-consuming, as it directly impacts both the financial resources of schools and, more importantly, the quality of education students receive. In many schools, the available facilities are outdated and were originally designed for smaller student populations. However, as enrollment numbers continue to grow, these facilities are no longer adequate to meet the demands of modern education.

Given the rise in student enrollment, the increase in academic programs, and the scarcity of resources, flexibility has become a critical consideration in the planning and management of school facilities. Schools must be designed with the future in mind, allowing for the potential to repurpose and expand spaces as needs evolve. As Caudill (1954) emphasized, terms like "expansible," "convertible," and "adaptable" should be used to describe spaces that can be easily reconfigured to accommodate changing educational needs. Regnier (1980) advocates for collaborative efforts between facility planners, budget analysts, administrators, faculty, and support staff to achieve this vision.

Effective school facility management plays a pivotal role in enhancing the quality of education. A well-executed maintenance plan can:

- Improve the efficiency and overall well-being of an educational institution
- Ensure cleanliness, safety, and order within the school environment
- Reduce the operational and lifecycle costs of buildings
- Help allocate resources more effectively by setting clear priorities for facility improvements

One crucial aspect of facility management is conducting a facility audit, which allows administrators to assess the current condition of the school's physical assets and plan for future maintenance and improvements. According to the *Planning Guide for Maintaining School Facilities* (2003), a facility audit provides critical data on the state of school infrastructure, highlighting areas in need of attention. This audit also helps:

- Provide planners, managers, and staff with detailed information on the condition and service history of facilities
- Offer data-driven insights for the development of maintenance and improvement plans
- Establish a baseline for tracking the progress of maintenance efforts over time
- Allow for a deeper understanding of product life cycles, comparing actual lifespan to expected lifespan

1.2 Purpose of the Study

The purpose of this study is to examine the relationship between school facility management and students' learning outcomes in secondary schools in Bayelsa State. Additionally, the study seeks to evaluate the level of school facility management and its impact on students' academic performance. Furthermore, the research will explore the contributions of different school facility management components to student learning outcomes in the region.

1.3 Research Questions

1. To what extent does school facility management impact student learning outcomes?
2. How can students' learning outcomes be improved through better management of school facilities?

1.4 Research Hypothesis

To achieve the objectives of this study, the following null hypothesis was proposed:

There is no significant relationship between school facility management and students' learning outcomes.

2. Methodology

A descriptive research design was employed for this study. The population for the study consisted of all secondary schools in Bayelsa State. A sample of 1,500 respondents was selected, including 50 school principals and 1,450 teachers. Data were collected using a self-designed instrument called the *School Facility Management and Student Learning Outcomes Questionnaire* (SFMSLOQ). The data collected were analyzed using frequency counts, percentages, and mean scores to address the research questions. For the mean score analysis, a nominal value of 2 was assigned to "YES" responses and 1 to "NO" responses. A mean score of 1.00 or greater was considered an agreement, while a score below 1.00 indicated disagreement. To test the hypothesis, Pearson Product Moment Correlation was used, with the significance level set at 0.05.

3. Results

The data were analyzed, and the results were presented according to the research questions.

Research Question 1: To what extent does school facility management affect students' learning outcomes?

Table 1: Responses on how school facility management affects students' learning outcomes.

S/N	ITEMS	YES	NO	TOTAL	YES %	NO %
1	Having good seats can affect student learning outcomes.	1500	-	1500	100%	-
2	Instructional aide can affect student learning outcomes.	1450	50	1500	97%	3%
3	Teaching and writing materials can affect student learning outcomes.	1200	300	1500	80%	20%
4	Well equipped laboratories can improve student learning outcomes.	1352	148	1500	90%	10%
5	School plants or structures can affect and improve student learning outcomes.	600	900	1500	40%	60%

The data from Table 1 indicates that all respondents agree that facility management influences student learning outcomes. Specifically, 100% of the respondents believe that having comfortable seating for students significantly impacts their performance. Additionally, 97% of respondents agree that instructional aides play a role in affecting student learning outcomes, while 3% disagree. Well-equipped laboratories and teaching materials are also seen as factors that influence learning outcomes, with 90% and 80% of respondents affirming their importance, respectively. Conversely, 10% and 20% do not agree with the impact of these facilities. Finally, 40% of respondents believe that school plants or structures positively affect student learning outcomes, while 60% disagree with this assertion.

Table 2: Compressed Responses on the Influence of School Facility Management on Student Learning Outcomes

Variables	No.	Yes	Yes %	No	No %	Sum	X	X %
Principals/ Teachers	1500	6102	91%	1398	19%	7500	1.9	95%

Table 2 illustrates that 81% of respondents acknowledge the positive impact of school facility management on student learning outcomes, while 19% hold a negative view. The mean score of 1.9, which translates to 95%, suggests that a significant majority of principals and teachers recognize the potential of facility management in enhancing student learning outcomes in secondary schools within Bayelsa State.

Research Question 2: To What Extent Can Student Learning Outcomes Be Improved Through Facility Management?

Table 3: Responses on How Facility Management Can Improve Student Learning Outcomes

S/N	ITEMS	YES	NO	TOTAL	YES %	NO %
1	When classrooms are maintained and properly managed, students' learning outcomes can be improved.	1500	-	1500	100%	-
2	When libraries are provided and properly maintained, students' learning outcomes can be improved.	1450	50	1500	97%	3%
3	Students learning outcomes can be improved when students sitting positions are properly organized	86	1414	1500	6%	94%
4	Students learning outcomes can also improve when there is proper check on teaching and writing materials.	1355	145	1500	90%	10%
5	Facility management can improve students learning outcomes when there is proper supervision of all plants and facilities in the school environment.	1500	-	1500	100%	-

From the data in Table 3, it is evident that all respondents believe student learning outcomes can be enhanced through effective facility management. Every respondent, 100%, agrees that maintaining and properly managing classrooms, along with supervising school plants and facilities, can improve student outcomes. Moreover, 97% of the respondents agree that well-maintained libraries can positively impact student learning, while 3% disagree with this view. Proper monitoring of teaching and writing materials is also crucial, with 90% of respondents affirming its importance, although 10% disagree. Lastly, 94% of respondents disagree that a well-organized seating arrangement significantly affects learning outcomes, while 6% believe it could have a positive influence.

Table 4: Compressed Responses on How Student Learning Outcomes Can Be Improved Through Facility Management

Variables	No.	Yes	Yes %	No	No %	Sum	X	X %
Principals/ Teachers	1500	5891	79%	1609	21%	7500	1.7	85%

The data presented in Table 4 shows that 79% of the respondents, based on five items, provided a positive response regarding how facility management can enhance student learning outcomes. In contrast, 21% of respondents express a negative view of the impact of facility management on student learning outcomes. Additionally, the table reveals a mean score of 1.7, which corresponds to 85%. This suggests that a large majority of principals and teachers believe that student learning outcomes can be significantly improved through effective facility management in secondary schools across Bayelsa State.

3.1 Analysis of Hypothesis

Null Hypothesis (HO): There is no significant relationship between school facility management and student learning outcomes.

Results:

Respondents	N	X	S	T. Cal	T. Crit	Decision
Teachers	1500	21.7	47.8	1498	2.54	1.96
Principals		13.9	28.74			

Significance Level: 0.05

4. Discussion of Findings

The analysis of the data clearly indicates that the null hypothesis, which proposed no significant relationship between school facility management and student learning outcomes, has been rejected. This finding highlights a strong correlation between the effective management of school facilities and improved learning outcomes in secondary schools.

When facilities are well-managed, they contribute significantly to better student performance, enhancing both the teaching and learning process. A conducive and well-equipped learning environment fosters engagement, making education more enjoyable and effective. The presence of necessary resources and infrastructure plays a crucial role in ensuring that teaching and learning are carried out efficiently.

The report further shows that secondary schools in Bayelsa State have relatively high levels of facility management. This suggests that well-maintained facilities are directly linked to a better quality of education. Schools aim to provide a solid educational foundation, which requires not only meeting the physical and emotional needs of students but also planning for future expansion. Properly managed facilities create an environment conducive to achieving these goals.

Furthermore, the findings demonstrate that student achievement in secondary schools in Bayelsa has been above average. The combination of quality facility management, dedicated teachers, and motivated students has contributed to this success. The management of school facilities has a significant impact on students' academic performance. This can be attributed to the growing societal interest in the educational system, which has led to investments in school infrastructure. The conclusion is clear: enhanced management of school facilities directly influences teaching quality and student learning outcomes.

On the other hand, poorly managed facilities lead to ineffective teaching and learning, which can result in lower student performance. Thus, to ensure better academic results, schools must prioritize effective facility management. Without adequate management, even motivated students and committed staff cannot achieve their full potential. Furthermore, the location of schools plays a role—institutions situated in unsuitable areas, such as near busy markets or noisy movie theaters, may face challenges that hinder students' learning experiences. In summary, the management of classrooms, laboratories, technical workshops, and libraries plays a pivotal role in shaping student outcomes. When these areas are well-maintained, students benefit from a more supportive and productive learning environment, which positively impacts their academic success.

5. Conclusion

The analysis reveals a consistent improvement in student learning outcomes over the study period, correlating with the effective management of school facilities. While classroom management, instructional space, and school layout are crucial factors, other elements, such as teacher dedication and student engagement, also significantly influence learning outcomes.

5.1 Recommendations

1. The government should continue prioritizing effective school facility management to maintain and improve student learning outcomes.
2. Parents, teachers, and the community should actively contribute to enhancing school facilities and the learning environment.
3. Schools should ensure proper maintenance of classrooms, libraries, and technical workshops to support student success.
4. There should be a focus on improving the layout and design of school sites to create conducive learning environments.
5. The government must continue to invest in educational infrastructure to support long-term improvements in teaching and learning outcomes.

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