# CLASSROOM ENVIRONMENT AND ITS INFLUENCE ON LEARNERS' ACADEMIC ACHIEVEMENT



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## **Classroom Environment and Its Influence on Learners' Academic Achievement**

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#### Abstract

This study was conducted to investigate the relationship between classroom design and its influence on student performance in San Fernando I District, Division of Bukidnon, School Year (SY) 2024-2025. This study was performed by applying descriptive-correlational research design. The researcher utilized a self-made survey questionnaire to gather the data needed to answer the questions in this study, which was validated and got a Cronbach's Alpha Coefficient of .944. The respondents were the Grade VI learners in the large school, medium school, and small school of the locale. The data were analyzed using descriptive statistics such as frequency count, percentage, mean, standard deviation, and Pearson r Product Moment Correlation Coefficient. This study revealed the following findings: There was a great extent of implementation of the classroom environment in San Fernando I District, Division of Bukidnon, School Year (SY) 2024-2025. The highest percentage of learners achieved a Satisfactory rating. There was no significant relationship between the extent of implementation of classroom environment and learners' academic achievement.

Keywords: classroom environment, influence, learners' academic achievement

## Introduction

The physical environment of educational settings significantly influences students' academic performance and overall well-being. Educational research has focused on the impact of classroom design on student performance. The configuration, illumination, seating arrangements, and general atmosphere of a classroom can profoundly influence student engagement, motivation, and learning outcomes. Comprehending the interaction of these design components with educational methods is crucial for developing environments that promote optimal learning experiences and facilitate student achievement.

Notwithstanding the increasing acknowledgment of the significance of classroom design, substantial research gaps persist that necessitate more investigation. Although specific studies have investigated particular elements of classroom design and their influence on student performance, there is a necessity for a more extensive study that explores the overall implications of design decisions on varied student demographics in distinct educational environments. Furthermore, there are deficiencies in comprehending how contemporary technologies, such as interactive displays, and adaptable furniture configurations, might be used in classroom design to improve student engagement and academic performance.

Rectifying these deficiencies in the literature can yield significant insights for educators, school administrators, and legislators aiming to establish learning environments that enhance student learning and well-being.

The legal foundation for examining classroom design and its impact on student performance is substantiated by a body of literature that emphasizes the necessity of creating favorable learning environments for children. The Education Act of 2002 underscores the obligation of educational institutions to provide students with safe and supportive learning environments that facilitate their academic growth. Research conducted by Tanner et al. (2017) and Smith and Johnson (2019) has underscored the correlation between classroom design and student results, stressing the necessity for evidence-based design solutions to enhance student engagement and achievement. This research is based on governmental regulations and academic literature that support the establishment of learning environments that emphasize student well-being and academic achievement.

Compliance with DepEd Order No. 21, s. 2023, particularly paragraph 2, which underscores the "Maintenance of Clean Schools" during the Brigada Eskwela implementation phase, is crucial for educational institutions and communities. This directive emphasizes the importance of establishing and sustaining a clean and supportive learning environment, crucial for enhancing the health, safety, and welfare of children, educators, and school staff.

By adhering rigorously to the principles specified in this paragraph, educational institutions can guarantee that the physical environments for learning are devoid of risks, facilitate effective learning, and foster a sense of pride and ownership among all stakeholders. An immaculate and well-kept educational environment not only cultivates a favorable climate for instruction and learning but also enhances the school's general image and reputation among the community.

Furthermore, the upkeep of hygienic educational institutions corresponds with overarching goals about health and sanitation, which are vital elements in delivering quality education. A sanitary environment mitigates the risk of illness transmission, enhances student attendance and participation, and fosters overall student well-being. It also imparts to pupils the significance of cleanliness and responsibility, influencing their behaviors and attitudes towards their immediate environment and the broader community.

The execution of Brigada Eskwela, designed to involve diverse stakeholders in enhancing school facilities, necessitates compliance with the cleanliness guidelines outlined in DepEd Order No. 21, s. 2023, as a fundamental measure for establishing a safe, healthy, and

conducive learning environment. By emphasizing the cleanliness and maintenance of school buildings, institutions exhibit their dedication to delivering a quality education that focuses on the comprehensive development and welfare of students.

When schools strictly comply with DepEd Order No. 21, s. 2023, especially paragraph 2, which underscores the "Maintenance of Clean Schools" during the Brigada Eskwela implementation phase, an unintended consequence may arise in the alteration of the aesthetic appeal of schools and classrooms. Although Brigada Eskwela primarily aims to guarantee the cleanliness, safety, and functionality of school facilities, the concentration on maintenance may unintentionally result in a transition from lively and visually engaging environments to more austere and minimalist structures.

The shift from vibrant and appealing educational environments to austere and utilitarian designs can be ascribed to the emphasis on hygiene and practicality above ornamental features. Schools meticulously adhere to requirements to ensure cleanliness and organization, sometimes leading to a deliberate attempt to streamline and simplify the visual elements of classrooms and school facilities. This transition to simplicity is an essential compromise to maintain hygiene and safety standards in school environments.

The alteration of school aesthetics may be viewed as a deviation from conventional vibrant and visually attractive learning environments; nonetheless, it is crucial to acknowledge that the principal objective of Brigada Eskwela is to establish safe, clean, and conducive spaces for education. The transition to simpler architecture emphasizes a dedication to the essential principles of cleanliness and functioning, which are vital for fostering a healthy and productive educational atmosphere. Stakeholders must reconcile the necessity for cleaning and maintenance with the aspiration to cultivate engaging and inspirational environments that foster the comprehensive development of pupils. Integrating creativity and visual appeal while ensuring cleanliness in schools helps achieve a balance between aesthetics and utility in educational environments.

The researcher found it very significant to investigate the relationship between classroom design and its influence on learners' academic achievement in San Fernando I District, Division of Bukidnon, School Year (SY) 2024-2025

#### **Research Questions**

This study investigated the relationship between classroom design and its influence on learners' academic achievement in San Fernando I District, Division of Bukidnon, for School Year (SY) 2024-2025.

Specifically, this study answered the following questions:

- 1. What is the extent of implementation of the classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design?
- 2. What is the learners' academic achievement?
- 3. Is there a significant relationship between the extent of the classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature, and Air Quality, Use of Technology, and Classroom Structuring and Design and learners' academic achievement?

## Methodology

### **Research Design**

This study applied descriptive-correlational research design. It delved into the relationship between classroom environment and learners' academic achievement in San Fernando I District, Division of Bukidnon, School Year (SY) 2024-2025.

Data on the extent of implementation of classroom design and structuring in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design were gathered by using the researcher-made questionnaire and were analyzed by employing descriptive statistics.

### Participants

This research was conducted in the San Fernando I District Division of Bukidnon, School Year (SY) 2024-2025. San Fernando is a municipality located in the landlocked province of Bukidnon. The municipality encompasses a surface area of 705.06 square kilometers, equivalent to 272.23 square miles, or 6.72% of Bukidnon's total area. The population, as established by the 2020 Census, was 63,045.

According to the great circle distance, the cities nearest to San Fernando are Valencia, Bukidnon; Malaybalay, Bukidnon; Tagum; Davao del Norte; Panabo, Davao del Norte; Cagayan de Oro; and Davao City. The closest municipalities are Cabanglasan, Bukidnon; Quezon, Bukidnon; Lantapan, Bukidnon; Maramag, Bukidnon; Talaingod, Davao del Norte; and Don Carlos, Bukidnon. The distance from the national capital is 877.61 kilometers (545.32 miles). The subsequent list specifies these distance metrics.

San Fernando, a municipality in Bukidnon province, Philippines, is a thriving community set against the region's scenic backdrop. Located in the northern part of Bukidnon, San Fernando is distinguished for its plentiful agricultural resources and scenic vistas. The town is surrounded by verdant mountains and fertile plains, establishing an ideal environment for agricultural activities and other rural enterprises. Agriculture functions as a crucial economic driver, with crops like corn, rice, and vegetables flourishing in the municipality's fertile soil.

The hamlet of San Fernando is characterized by its amiable and welcoming atmosphere, reflecting the traditional friendliness of Filipino culture. The residents of the region engage in various cultural and community events, contributing to the vibrant and diversified tapestry of life in the municipality. San Fernando, albeit limited in size, exerts a significant influence on the economic and social dynamics of Bukidnon. This demonstrates the perseverance and industriousness of its citizens.

San Fernando is distinguished for its natural beauty and agricultural productivity and functions as a hub for cultural exchange and community solidarity. The town's festivals and events showcase the rich customs and heritage of its population, providing both locals and visitors with a deeper understanding of the cultural roots that define San Fernando. San Fernando, a municipality in Bukidnon, exemplifies the harmonious coexistence of nature and human life in the ce Mindanao, rendering it a picturesque and dynamic locale.

The modest community was unexpectedly highlighted when a gentleman teaching at the local last-mile school received a national prize. Mr. Junmerth T. Jorta, a Teacher I and Officer-in-Charge of Keupiyanan Te Balugo, a Last Mile School in Bukidnon, has been honored as one of the 10 recipients of the Metrobank Foundation Outstanding Filipinos Awards for 2022, celebrating the foundation's 60th anniversary. Jordan was acknowledged at Metrobank Foundation Inc.'s (MBFI) hybrid conferment event for his exceptional efforts in addressing hunger and illiteracy within the Indigenous People's (IP) community. Figure 2 shows the administrative Map of the locale of the study.

The respondents of the study were the Grade VI learners in the large school, medium school, and small school in public elementary schools in San Fernando I District, Division of Bukidnon, School Year (SY) 2024-2025. When requesting them to participate in a study examining classroom design and its impact on student performance, they may have their perspective on what is attractive and essential as they learn.

The respondents were mainly from the following schools: Anuran to Tibugawan Elementary School, Kawayan Elementary School, and Little Baguio Elementary School. Table 1 presents the distribution of respondents by school.

Table 1. Distribution of Respondents by School				
Name of School	Number of Learner- Respondents			
An-anaran to Tibugawan Elementary School	14			
Kawayan Elementary School	29			
Little Baguio Elementary School	84			
Total	127			

#### **Ethical Considerations**

This study was performed in strict compliance with established ethical principles to safeguard and honor all persons engaged. Before data collection, informed consent was secured from each participant, explicitly detailing the study's goal, procedures, potential hazards, and benefits. Confidentiality and anonymity were strictly upheld during the research procedure, with all data securely stored and available just to approved individuals. Participants were guaranteed the right to withdraw from the study at any moment without repercussions, and all measures were implemented to mitigate any potential injury or discomfort.

## **Results and Discussion**

This section presents gathered and processed data, analyzes the data to answer the problems posed, and interprets the data in the light of descriptive research. This study investigated the relationship between classroom design and its influence on student performance in San Fernando I District, Division of Bukidnon, for School Year (SY) 2024-2025.

Specifically, this study determined the extent of implementation of classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design; determined the learners' academic achievement; found out significant relationship between the extent of classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design and learners' academic achievement.

The following sections present and discuss the extent to which the classroom environment has been implemented in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design.

Table 2 presents and analyzes the extent of Implementation of Classroom Environment in terms of Seating Arrangement.

Table 2. Extent of Implementation of Classroom Environment in Terms of Seating Arrangement

Indicator	Mean	SD	Interpretation
The seating arrangement in my classroom impacts my ability to engage with the less	son content 4.38	0.844	To a Very Great
effectively.			Extent
Where I sit in the classroom affects my participation in class discussions and group a	ctivities. 4.21	1.005	To a Very Great
			Extent
The seating arrangement influences my level of focus and concentration during lecture	es and class 4.11	1.093	To a Great Extent

#### activities.

The comfort and ergonomics of my seating arrangement influence my overall learning experience	4.03	0.992	To a Great Extent
in the classroom.			
My learning outcomes are influenced by the proximity of my seat to the teacher and interactive	3.98	1.000	To a Great Extent
learning resources.			
Overall	4.14	0.676	To a Great Extent

Range	Indicator
4.20-5.00	To a Very Great Extent
3.40-4.19	To a Great Extent
2.60-3.39	To a Moderate Extent
1.80-2.59	To a Small Extent
1.00-1.79	To a Very Small Extent

shows the extent of implementation of the classroom environment in terms of seating arrangement was assessed based on various indicators. Among these, "The seating arrangement in my classroom impacts my ability to engage with the lesson content effectively" (Mean = 4.38, SD = 0.844) had the highest mean score, qualitatively described as To a Very Great Extent indicating that students perceive seating arrangements as highly influential in their engagement with lesson content. Seating arrangements can broadly be categorized into traditional and flexible setups. In traditional classroom designs, students typically sit in rows facing the teacher, which emphasizes a teacher-centered approach. This arrangement has been criticized for limiting student interaction and fostering passive learning (Smith & Jones, 2018).

Another indicator qualitatively described To a Very Great Extent of implementation was "I believe that where I sit in the classroom affects my participation in class discussions and group activities" (Mean = 4.21, SD = 1.005). Conversely, flexible seating, where students have the freedom to choose seating based on their preferences, has been linked to increased student engagement and collaboration (Brown et al., 2020). Flexible seating arrangements, such as group clusters or U- shaped designs, encourage communication, peer learning, and active participation.

Research by Thompson et al. (2019) found that students in classrooms with flexible seating performed better in group activities and demonstrated enhanced problem-solving skills compared to those in traditional seating layouts. This suggests that seating flexibility can positively influence collaborative learning environments, leading to improved academic outcomes.

Meanwhile, the indicator with the lowest mean score was "I feel that my learning outcomes are influenced by the proximity of my seat to the teacher and interactive learning resources" (Mean = 3.98, SD = 1.000), which was qualitatively described as To a Great Extent of implementation. Proximity to the teacher and other students is another factor influenced by seating arrangement. Research by Williams (2021) indicates that students seated closer to the teacher tend to receive more attention and guidance, resulting in higher engagement and performance.

The study also found that students seated at the back of the classroom were more likely to disengage and display lower academic achievement. In addition, seating arrangements that facilitate eye contact between students and the teacher enhance communication and increase participation.

Other indicators, such as "The seating arrangement influences my level of focus and concentration during lectures and class activities" (Mean = 4.11, SD = 1.093) and "The comfort and ergonomics of my seating arrangement influence my overall learning experience in the classroom" (Mean = 4.03, SD = 0.992), were also rated within To a Great Extent category, indicating that students acknowledge the impact of these factors on their focus and learning experience. These seating designs also support equitable participation by allowing all students to feel equally visible and valued during discussions.

Classroom seating can also influence student behavior and classroom management. In their study, Green et al. (2017) found that students placed in a structured seating arrangement, such as rows or columns, exhibited fewer disruptive behaviors compared to those in flexible seating arrangements.

Overall, the extent of implementation of classroom seating arrangements received a mean score of 4.14 (SD = 0.676), which falls within the To a Great Extent category. Flexible seating, while promoting engagement, can pose challenges for maintaining discipline. A study by Johnson and Roberts (2022) highlighted that classroom with flexible seating arrangements required more active classroom management strategies to ensure students remained focused on their tasks. Teachers in these environments often employed rotational seating charts or specific seating zones to maintain order without compromising the benefits of a flexible seating design.

Student comfort, both physical and psychological, is another factor impacted by seating arrangement.

These findings underscore the necessity for instructors to organize seating to enhance student learning meticulously. Educators must contemplate adaptable seating arrangements that accommodate various learning preferences and foster active participation. Diverse configurations for various activities (e.g., collaborative work, lectures, solitary study) might improve engagement and concentration.

Furthermore, guaranteeing fair access to visual and aural resources, irrespective of seating position, is essential. The findings indicating the influence on participation mandate a transition to student-centered configurations, allowing students some autonomy in selecting

their seating, when feasible. Effective classroom management, encompassing adequate seating arrangements, correlates with enhanced student results (Evertson & Emmer, 2020).

Moreover, research on flexible seating has demonstrated beneficial impacts on student involvement and motivation (Rosenberg & Gradwohl, 2019). The evidence suggests that instructors should consider the physical learning environment and leverage it to improve student learning. The elevated mean scores signify a distinct correlation between students' perceived seating arrangement and their educational experience. Consequently, educators must consider student input and preferences while devising seating configurations.

Studies support the importance of flexible seating, indicating that it can increase student engagement and motivation (Fisher et al., 2018). Flexible seating allows students to choose where and how they learn, fostering a sense of autonomy.

Additionally, the impact of seating on participation is reinforced by research showing that collaborative seating arrangements enhance student interaction and group work (Johnson & Johnson, 2017).

Student agency in choosing seating arrangements has also been studied recently, showing a positive impact on student engagement (Lynch, 2021).

Table 3 presents and discusses the extent of the Implementation of the Classroom Environment in terms of the Lighting and Color Scheme.

Table 3. Extent of Implementation of Classroom Environment in terms of Lighting and Color Scheme

Indicator	Mean	SD	Interpretation
Proper lighting, along with a well-thought-out color scheme, enhances my ability to focus on tasks	4.25	0.984	To a Very Great
and contributes to a more comfortable learning environment.			Extent
The colors used in the classroom environment influence my level of creativity and engagement	4.00	1.091	To a Great Extent
with the learning material.			
The use of natural light or artificial lighting in the classroom affects my comfort and	3.91	1.016	To a Great Extent
productivity.			
The lighting in my classroom affects my ability to focus and stay attentive during lessons.	3.85	1.235	To a Great Extent
The white/off-white color scheme of the classroom walls and decor impact my mood and	3.77	1.048	To a Great Extent
motivation to learn.			
Overall	3.96	0.730	To a Great Extent

 Range
 Indicator

 4.20-5.00
 To a Very Great Extent

 3.40-4.19
 To a Great Extent

 2.60-3.39
 To a Moderate Extent

1.80-2.59 To a Small Extent 1.00-1.79 To a Very Small Extent

Table 3 reveals the extent of implementation of the classroom environment in terms of lighting and color scheme was evaluated through several indicators. Among these, "Proper lighting, along with a well-thought-out color scheme, enhances my ability to focus on tasks and contributes to a more comfortable learning environment" (Mean = 4.25, SD = 0.984) had the highest mean score, being qualitatively described To a Great Extent, indicating that students strongly perceive the importance of lighting and color in maintaining focus and creating a conducive learning space. Lighting plays a significant role in how students perceive and interact with their learning environment. Studies have shown that natural light, in particular, has a positive effect on student performance. Barrett et al. (2015) found that classrooms with adequate daylight exposure led to a 20% increase in student learning rates as compared to those with limited natural light. This improvement was attributed to enhanced mood and concentration levels that daylight promotes. The quality of artificial lighting also plays a role.

On the other hand, the indicator with the lowest mean score was "The white/off- white color scheme of the classroom walls and decor impacts my mood and motivation to learn" (Mean = 3.77, SD = 1.048). While still classified under the Great Extent category, this suggests that students recognize the influence of color schemes on their motivation, though to a slightly lesser degree than other factors.

Winterbottom and Wilkins (2016) emphasized that flickering fluorescent lights, commonly used in classrooms, can cause discomfort and negatively impact student concentration, leading to poorer academic outcomes. Further supporting the importance of natural light, Schulte-Markwort et al. (2017) reported that students exposed to higher levels of daylight in the classroom demonstrated reduced symptoms of stress and fatigue, which in turn improved their cognitive functions.

Other indicators, such as "The colors used in the classroom environment influence my level of creativity and engagement with the learning material" (Mean = 4.00, SD = 1.091), "The use of natural light or artificial lighting in the classroom affects my comfort and productivity" (Mean = 3.91, SD = 1.016), and "The lighting in my classroom affects my ability to focus and stay attentive during lessons" (Mean = 3.85, SD = 1.235), were also rated within the Great Extent category. This finding aligns with Cheryan et al. (2017), who suggested that well-lit environments, especially those incorporating natural light, enhance not only cognitive performance but also the overall aesthetic experience, fostering greater student satisfaction. However, recent research has also emphasized the importance of controlling lighting conditions based on tasks and times of day.



Heckler and Wiggins (2020) noted that adjustable lighting systems, allowing changes in brightness and warmth, resulted in improved student engagement and learning outcomes. The study proposed that dynamic lighting systems could be tailored to support different learning activities, with cooler light being more effective for concentration-intensive tasks and warmer light for relaxation or group work.

Overall, the extent of implementation of lighting and color schemes in the classroom received a mean score of 3.96 (SD = 0.730), which falls under the Great Extent category. This implies that, on average, students recognize the role of proper lighting and well-planned color schemes in fostering a comfortable and engaging learning environment. The color scheme of a classroom is another critical environmental factor that can influence student emotions, behavior, and learning. Zentner and Grandjean (2016) explored how different colors impact student performance. They found that cooler colors, such as blue and green, create a calming atmosphere that enhances concentration, especially during problem-solving activities. Warmer colors, such as red and orange, were found to stimulate excitement and creativity but could also lead to distractions when overused.

Wang and See (2018) conducted a study on the emotional and cognitive effects of color schemes in classrooms. They concluded that neutral tones, combined with accent walls in vibrant colors, provided an optimal balance. Neutral tones helped reduce anxiety and overstimulation, while bright accents could promote creativity without overwhelming the students.

These findings indicate that instructors must closely consider the lighting and color schemes in their classrooms. Natural light should be optimized whenever feasible, and artificial lighting must be judiciously chosen to minimize glare and enhance concentration. Color schemes must be meticulously selected to foster an engaging yet tranquil environment. Although white and off-white are prevalent, the data indicates the potential benefits of investigating alternative color palettes that could enhance student motivation and creativity.

Research indicates that natural light enhances student performance and decreases absenteeism (Heschong Mahone Group, 2003). Moreover, research in color psychology indicates that distinct colors can elicit diverse emotional and cognitive reactions (Naz & Epps, 2004). Educators ought to contemplate these elements while structuring their classes. Moreover, the research reveals that students recognize the influence of their physical surroundings on their concentration abilities. Consequently, educators want to consider student opinions concerning the lighting and color schemes in their classrooms to guarantee that the setting is favorable to studying.

Recent studies have continued to emphasize the role of natural light in improving student alertness and performance (Küller & Lindsten, 2019). Research on color psychology in educational settings has also highlighted the potential of using specific color palettes to create a calming and stimulating learning environment (Godfrey & Lawes, 2020). Research also shows that the correct lighting can help to reduce student fatigue (Veitch, 2020).

Table 4 shows and interprets the extent of the Implementation of the Classroom Environment in terms of the Acoustic Environment.

Indicator	Mean	SD	Interpretation
The acoustics in the classroom impact my participation in class discussions and group activities.	4.00	1.024	To a Great Extent
The noise levels in my classroom affect my ability to concentrate and understand the lesson content	3.97	1.201	To a Great Extent
The clarity of sound in the classroom influences my comprehension and retention of information	3.97	1.046	To a Great Extent
The acoustic environment in the classroom plays a significant role in my ability to focus and learn effectively.	3.82	1.218	To a Great Extent
The presence of background noise or echoes in the classroom affects my overall learning experience.	3.77	1.190	To a Great Extent
Overall	3.91	0.753	To a Great Extent

 Range
 Indicator

 4.20-5.00
 To a Very Great Extent

 3.40-4.19
 To a Great Extent

 2.60-3.39
 To a Moderate Extent

 1.80-2.59
 To a Small Extent

1.00-1.79 To a Very Small Extent

Table 4 shows the extent of implementation of the classroom environment in terms of the acoustic environment was assessed based on various indicators. The highest mean score was observed in "I believe that the acoustics in the classroom impact my participation in class discussions and group activities" (Mean = 4.00, SD = 1.024), indicating that students recognize the significant influence of classroom acoustics on their engagement and interaction. Numerous studies have demonstrated the adverse effects of poor acoustic environments on students' ability to concentrate and perform academically.

Shield and Dockrell (2018) found that excessive noise levels in classrooms, particularly from external sources such as traffic or playgrounds, were correlated with lower reading comprehension and cognitive performance. This is consistent with findings by Massonnié et al. (2019), who showed that background noise adversely affected students' memory retention and problem-solving skills, especially in younger children.

Meanwhile, the indicator with the lowest mean score was "The presence of background noise or echoes in the classroom affects my overall learning experience" (Mean = 3.77, SD = 1.190). Although rated To a Great Extent category, this suggests that while background noise and echoes are acknowledged as factors affecting learning, they may not be as immediately impactful as other aspects of classroom acoustics. Research has also explored the use of acoustic treatments to mitigate the adverse effects of noise.

According to Filippini et al. (2020), sound-absorbing materials such as ceiling panels and carpeting can significantly reduce reverberation times, creating a more conducive learning environment. These interventions not only lower overall noise levels but also enhance speech intelligibility, which is essential for comprehension, particularly in language-based subjects.

Other indicators, such as "The noise levels in my classroom affect my ability to concentrate and understand the lesson content" (Mean = 3.97, SD = 1.201), "The clarity of sound in the classroom influences my comprehension and retention of information" (Mean = 3.97, SD = 1.046), and "The acoustic environment in the classroom plays a significant role in my ability to focus and learn effectively" (Mean = 3.82, SD = 1.218), all received Great Extent ratings.

The benefits of such treatments were echoed in a study by Iglehart and Young (2016), who found that improved classroom acoustics led to better verbal communication between teachers and students, resulting in enhanced academic performance. Speech intelligibility is a key factor in the acoustic environment and its influence on learning. An experimental study by Sato and Bradley (2017) highlighted that student in classrooms with optimal acoustics performed better in listening tasks and showed higher engagement levels. They also reported that these students had fewer difficulties understanding instructions, which contributed to better overall academic achievement.

Overall, the extent of implementation of the classroom acoustic environment received a mean score of 3.91 (SD = 0.753), which falls under the Great Extent category. The study by Kostyuk (2021) reinforced these findings, emphasizing the importance of clear auditory signals for effective learning, particularly for students with auditory processing challenges. In addition to academic performance, the acoustic environment has been linked to students' emotional and psychological well-being. Evans and Maxwell (2017) reported that prolonged exposure to high noise levels in classrooms was associated with increased stress and fatigue among students, which in turn impacted their motivation and attention. The researchers argued that improving the acoustic conditions in classrooms is not only a matter of academic importance but also crucial for fostering a healthy learning atmosphere.

These findings indicate that instructors must closely consider the lighting and color schemes in their classrooms. Natural light should be optimized whenever feasible, and artificial lighting must be judiciously chosen to minimize glare and enhance concentration. Color schemes must be meticulously selected to foster an engaging yet tranquil environment. Although white and off-white are prevalent, the data indicates the potential benefits of investigating alternative color palettes that could enhance student motivation and creativity. For example, integrating soothing blues and greens might foster a more tranquil learning atmosphere, whilst vivid colors can enhance creativity in specific zones.

Research indicates that natural light enhances student performance and decreases absenteeism (Heschong Mahone Group, 2003). Moreover, research in color psychology indicates that distinct colors can elicit diverse emotional and cognitive reactions (Naz & Epps, 2004). Educators ought to contemplate these elements while structuring their classes.

Moreover, the research reveals that students recognize the influence of their physical surroundings on their concentration abilities. Consequently, educators want to take into account student opinions concerning the lighting and color schemes in their classrooms to guarantee that the setting is favorable to studying. Contemporary research continues to underscore the negative impact of noise on student attention and academic achievement (Hyde et al., 2016). Studies have also explored the use of sound-absorbing materials and classroom design to improve speech intelligibility and reduce noise distractions (Astolfi et al., 2018).

The use of technology, such as sound field systems, has also been researched and proven to increase student understanding (Crandell & Smaldino, 2019).

Table 5 illustrates and deliberates the extent to which the Classroom Environment has been implemented in terms of Temperature and Air Quality.

Table 5. Extent of Implementation of Classroom Environment in terms of Temperature and Air Quality

Indicator	Mean	SD	Interpretation
The temperature of the classroom environment influences my overall productivity and	4.15	0.909	To a Great Extent
engagement with the learning material.			
The temperature in the classroom affects my comfort level and concentration during lessons.	4.11	1.142	To a Great Extent
Proper ventilation and air circulation in the classroom are important factors for my academic	4.02	1.127	To a Great Extent
performance.			
The air quality in the classroom impacts my alertness and ability to learn effectively.	4.00	1.008	To a Great Extent
The temperature and air quality in the classroom significantly affect my ability to focus and	3.94	1.252	To a Great Extent
succeed academically.			
Overall	4.04	0.752	To a Great Extent
Range Indicator			

4.20-5.00 To a Very Great Extent

3.40-4.19 To a Great Extent

 2.60-3.39
 To a Moderate Extent

 1.80-2.59
 To a Small Extent

 1.00-1.79
 To a Very Small Extent

Table 5 presents the extent of implementation of the classroom environment in terms of temperature and air quality was assessed based on several indicators. The highest mean score was recorded for "The temperature of the classroom environment influences my overall productivity and engagement with the learning material" (Mean = 4.15, SD = 0.909), suggesting that students strongly acknowledge the role of classroom temperature in maintaining their productivity and engagement. Optimal classroom temperature has been shown to significantly affect students' cognitive abilities, attention, and productivity.

Research indicates that temperatures outside the comfort zone (typically around 20°C-22°C) can impair concentration and reduce academic performance. For instance, Haverinen-Shaughnessy and colleagues (2018) explored how elevated classroom temperatures, particularly during warmer months, correlate with lower standardized test scores. They concluded that a consistent temperature regulation system in schools can improve overall student outcomes.

Conversely, the indicator with the lowest mean score was "I feel that the temperature and air quality in the classroom play a significant role in my ability to focus and succeed academically" (Mean = 3.94, SD = 1.252). While still classified under the Great Extent category, this implies that students recognize the importance of temperature and air quality in academic success, though to a slightly lesser degree than other factors.

Similarly, a study by Zhang et al. (2020) found that fluctuations in temperature within classrooms disrupt students' focus and retention abilities, particularly in younger children. These findings suggest that maintaining an optimal and stable thermal environment is crucial for enhancing learning conditions.

Other studies have analyzed the psychological impacts of temperature discomfort. For example, Baloch et al. (2016) highlighted that thermal discomfort often leads to irritability and lower engagement levels, which in turn hinder classroom participation. Conversely, environments with comfortable temperature ranges are associated with higher motivation, longer attention spans, and better task completion rates (Lavy, 2019).

Other indicators, such as "The temperature in the classroom affects my comfort level and concentration during lessons" (Mean = 4.11, SD = 1.142), "Proper ventilation and air circulation in the classroom are important factors for my academic performance" (Mean = 4.02, SD = 1.127), and "I believe that the air quality in the classroom impacts on my alertness and ability to learn effectively" (Mean = 4.00, SD = 1.008), were also rated within the Great Extent category. Air quality, particularly the concentration of CO2 and other pollutants in classrooms, has become a significant concern in recent years. Poor air quality can impair cognitive function, cause drowsiness, and increase absenteeism due to illness, all of which detract from students' academic performance.

A study by Bakó-Biró et al. (2017) investigated the relationship between classroom air quality and student performance, showing that high levels of indoor air pollutants, including carbon dioxide and volatile organic compounds, negatively affect decision-making and problem-solving skills.

Overall, the extent of implementation of temperature and air quality in the classroom received a mean score of 4.04 (SD = 0.752), which falls under the Great Extent category. A related study by Mendell et al. (2016) reinforced these findings, showing that poor air ventilation and high CO2 levels in schools are associated with reduced cognitive function. They recommended regular air quality assessments and ventilation improvements to optimize learning conditions. Moreover, recent advancements in HVAC systems, as noted by Erdmann et al. (2021), can help maintain consistent indoor air quality, reducing the negative impact on both student health and learning performance.

These findings underscore the necessity for educators to sustain ideal temperature and air quality in classrooms. Educators must guarantee sufficient ventilation, maintain temperature within a reasonable range, and assess air quality to reduce contaminants. The evidence indicates that pupils are exceptionally responsive to temperature's effect on productivity and engagement. Hence, continuous temperature regulation is essential.

Research indicates that temperature comfort substantially influences student performance and concentration (Wargocki & Wyon, 2017). Furthermore, studies on indoor air quality underscore the detrimental effects of pollutants on cognitive performance and learning (Fisk et al., 2019). Educators ought to contemplate these elements when overseeing their classrooms. The study reveals that students recognize the influence of air quality on their learning efficacy. Consequently, educators must be cognizant of the air quality within their classrooms and implement measures to enhance it.

Table 6 displays and discusses the extent to which the Classroom Environment has been implemented in terms of the Use of Technology.

Table 6. Extent of Implementation of Classroom Environment in Terms of Use	of Technology
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Indicator	Mean	SD	Interpretation
Using technology in class activities improves my motivation to learn.	4.26	0.953	To a Very Great
			Extent

The integration of technology in the classroom enhances my understanding of the subject	4.25	1.120	To a Very Great
The use of technology for assignments and projects enhances my ability to apply concepts	4.17	1.146	To a Great Extent
The availability of technological resources in the classroom positively impacts my engagement with the material.	4.14	0.982	To a Great Extent
Incorporating technology in classroom instruction improves my overall academic performance.	4.04	1.198	To a Great Extent
Overall	4.17	0.755	To a Great Extent
Range Indicator			

4.20-5.00 To a Very Great Extent 3.40-4.19 To a Great Extent

2.60-3.39 To a Moderate Extent

*1.80-2.59* To a Small Extent *1.00-1.79* To a Very Small Extent

Table 6 shows the extent of implementation of the classroom environment in terms of the use of technology was evaluated through various indicators. The highest mean score was recorded for "I believe that using technology in class activities improves my motivation to learn" (Mean = 4.26, SD = 0.953), indicating that students perceive technology as a significant factor in enhancing their motivation. Another indicator To a Great Extent of implementation was "The integration of technology in the classroom enhances my understanding of the subject matter" (Mean = 4.25, SD = 1.120), highlighting the role of technology in deepening students' comprehension of lessons. Flexible classroom designs allow for various teaching and learning activities to take place, fostering engagement and improving academic outcomes.

Studies show that classrooms with adjustable seating arrangements, movable furniture, and adaptable layouts can facilitate active learning, collaboration, and personalized instruction. For example, Byers et al. (2018) found that flexible learning spaces led to improved student engagement and academic performance by supporting different teaching styles, such as collaborative and inquiry-based learning. On the other hand, the indicator with the lowest mean score was "I feel that incorporating technology in classroom instruction improves my overall academic performance" (Mean = 4.04, SD = 1.198). Although this indicator falls within the Great Extent category, it suggests that while students recognize the positive impact of technology on their academic success, they may not view it as the most influential factor.

Additionally, Bartholomew et al. (2017) emphasized the importance of flexibility in promoting student autonomy, allowing students to customize their learning environment to suit individual needs and preferences. A review by Mulcahy et al. (2015) also underscored the significance of flexibility in modern classrooms, noting that adaptable spaces enhance both teacher and student agency. By promoting versatility, flexible classroom designs encourage creativity and foster an inclusive environment where diverse learning styles can thrive.

Other indicators, such as "The use of technology for assignments and projects enhances my ability to apply concepts learned in class" (Mean = 4.17, SD = 1.146) and "The availability of technological resources in the classroom positively impacts my engagement with the material" (Mean = 4.14, SD = 0.982), also received Great Extent ratings. Overall, the extent of implementation of technology in the classroom received a mean score of 4.17 (SD = 0.755), which falls under the Great Extent category. Accessibility in classroom design is essential to ensure that all students, regardless of physical or cognitive abilities, can participate fully in the learning process.

The integration of Universal Design for Learning (UDL) principles has been widely advocated as a means of creating accessible learning environments. One significant contribution is the work of Hehir et al. (2016), who explored the positive impact of accessible classroom designs on the performance of students with disabilities. They emphasized that accessible spaces, combined with assistive technologies, significantly reduce barriers to learning, resulting in improved academic outcomes.

The findings highlight the significance of effectively integrating technology into classroom instruction. Educators ought to utilize technology to improve student motivation, enhance comprehension, and create opportunities for practical application via assignments and projects. The data indicates that students exhibit heightened motivation toward technology; thus, the integration of interactive tools and digital resources can substantially enhance engagement.

Research indicates that integrating technology enhances student motivation and engagement (Hew & Brush, 2007). Research on technology-enhanced learning indicates that digital tools can facilitate deeper learning and promote critical thinking (Means et al., 2010). Educators must judiciously choose and apply technological tools that correspond with educational objectives and facilitate active learning. The data indicates that students recognize the influence of technology on their comprehension and engagement.

Table 7 presents and analyzes the extent to which the Classroom Environment has been implemented in terms of Classroom Structuring and Design.

 Table 7. Extent of Implementation of Classroom Environment in terms of Classroom Structuring and Design

Indicator	Mean	SD	Interpretation
I like our classroom to be colorful and have a lot of reading materials, which will positively	4.57	0.859	To a Very Great
impact my learning experience.			Extent

I like our current classroom design, as it is simple and free from space-occupying corners, promoting a conducive environment for focused learning.			To a Very Great Extent
The current classroom structuring and arrangements contribute	4.17	0.974	To a Great Extent
significantly to my overall satisfaction with the learning environment.			
I like it when no posters are posted on the classroom walls to remain bare and clean.	4.10	1.253	To a Great Extent
The organization of learning materials and resources in the classroom supports my academic			To a Great Extent
progress.			
Overall	4.24	0.667	) a Very Great Extent

Range	Indicator
4.20-5.00	To a Very Great Extent
3.40-4.19	To a Great Extent
2.60-3.39	To a Moderate Extent
1.80-2.59	To a Small Extent
1.00-1.79	To a Very Small Extent

Table 7 shows the extent of implementation of the classroom environment in terms of classroom structuring and design was evaluated based on several indicators. The highest mean score was observed for "I like our classroom to be colorful and has many reading materials to impact on my learning experience positively" (Mean = 4.57, SD = 0.859), indicating that students strongly prefer a visually engaging classroom with abundant reading materials to enhance their learning experience.

Other indicators, such as "I like our current classroom design as it is simple and free from space-occupying corners promoting a conducive environment for focused learning" (Mean = 4.25, SD = 0.891), received a Very Great Extent rating, showing that students appreciate minimalist designs that enhance focus. Additionally, "I believe that the current classroom structuring and arrangements contribute significantly to my overall satisfaction with the learning environment" (Mean = 4.17, SD = 0.974) and "I like it when no posters are posted on the classroom walls to remain bare and clean" (Mean = 4.10, SD = 1.253) were rated within the high extent category, reflecting varied preferences regarding classroom aesthetics and organization.

Meanwhile, the indicator with the lowest mean score was "The organization of learning materials and resources in the classroom supports my academic progress" (Mean = 4.09, SD = 1.087). Although still within the To a Great Extent category, this suggests that while students acknowledge the importance of organized learning materials, they are not perceived as significantly impactful as other aspects of classroom structuring and design.

Overall, the extent of implementation of classroom structuring and design received a mean score of 4.24 (SD = 0.667), classified under To a Very Great Extent. This suggests that students generally appreciate a well-structured and aesthetically pleasing classroom that balances colorfulness with simplicity, contributing to a conducive learning environment. The findings highlight the necessity for educators to develop visually engaging and resource-abundant classrooms while also ensuring simplicity and organization are preserved. The data indicates that students exhibit strong responsiveness to visual stimuli and accessible reading materials, suggesting that classroom design should promote both engagement and resource availability. Educators must evaluate the equilibrium between vibrancy and minimalism, ensuring that the classroom setting facilitates concentrated learning. Although organization holds significance, it may be of lesser importance compared to other design elements, suggesting that educators should emphasize visual appeal and spatial efficiency.

Research indicates that classroom design significantly influences student engagement and learning outcomes (Woolner, 2010). Additionally, research on environmental psychology highlights the role of visual stimuli in cognitive function and learning (Bell et al., 2001). Educators must take these factors into account when designing and organizing their classrooms. The data reveals diverse preferences among students concerning classroom aesthetics. Consequently, educators should take into account student feedback during the classroom design process.

The learners' academic achievement is presented and elaborated in the section that follows. Table 8 presents and discusses the learners' academic achievement.

Table 8. Level of Learners' Academic Achievement					
Range	f	%	Adjectival Rating		
90 - 100	15	11.8	Outstanding		
85 - 89	43	33.9	Very Satisfactory		
80 - 84	48	37.8	Satisfactory		
75 - 79	21	16.5	Fairly Satisfactory		
Below 75	0	0	Did Not Meet Expectations		
Total	127	100.0			

Revealed in Table 8 is the level of learners' academic achievement which was assessed based on different performance ranges. The highest percentage of learners fell within the 80-84 range (f = 48, 37.8%), receiving a Satisfactory rating. This indicates that a significant portion of the students demonstrated an acceptable level of academic achievement, though there is room for improvement. The arrangement of seating in classrooms has been found to affect students' engagement, interaction, and concentration.

Hwang, Kim, and Jang (2016) suggest that flexible seating arrangements encourage collaborative learning and can improve both social interaction and individual focus. Their study highlights how circular, or group seating arrangements promote communication and teamwork, while traditional row seating tends to limit peer interaction and critical thinking.

Following closely, 43 learners (33.9%) scored within the 85–89 range, earning a Very Satisfactory rating, suggesting that a considerable number of learners exhibited high academic achievement skills. Additionally, 21 learners (16.5%) achieved scores within the 75–79 range, classified as Fairly Satisfactory, implying that while they met the minimum competency level, they may require additional support to enhance their academic achievement.

Blackwell (2021) found that seating flexibility significantly improved student focus and motivation by providing students with a sense of autonomy. The arrangement of seating in classrooms has been found to affect students' engagement, interaction, and concentration. Hwang et al. (2016) suggest that flexible seating arrangements encourage collaborative learning and can improve both social interaction and individual focus. Their study highlights how circular, or group seating arrangements promote communication and teamwork, while traditional row seating tends to limit peer interaction and critical thinking.

Meanwhile, 15 learners (11.8%) attained scores within the 90–100 range, receiving an Outstanding rating and demonstrating excellent academic achievement. Notably, no students (0.0%) scored below 75, indicating that all learners met at least the Fairly Satisfactory level. Lighting is another crucial element influencing cognitive function, mood, and attention span. Benedict and Hoagland (2018) demonstrated that natural lighting boosts student alertness and cognitive performance. Their research revealed that classrooms with abundant natural lighting resulted in higher test scores and lower fatigue rates compared to those with artificial lighting.

The findings highlight the necessity for teachers to develop visually engaging and resource-abundant classrooms while also ensuring simplicity and organization are preserved. The data indicates that students exhibit strong responsiveness to visual stimuli and accessible reading materials, suggesting that classroom design should promote both engagement and resource availability. Educators must evaluate the equilibrium between vibrancy and minimalism, ensuring that the classroom setting facilitates concentrated learning. Although organization holds significance, it may be of lesser importance compared to other design elements, suggesting that educators should emphasize visual appeal and spatial efficiency.

Research indicates that classroom design significantly influences student engagement and learning outcomes (Woolner, 2010). Research in environmental psychology emphasizes the significance of visual stimuli in cognitive function and learning (Bell et al., 2001). Educators must take these factors into account when designing and organizing their classrooms. The data reveals diverse preferences among students concerning classroom aesthetics. Consequently, educators should take into account student feedback during the classroom design process.

The section that follows shows and interprets the significant relationship between the extent of the classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, Classroom Structuring and Design, and learners' academic achievement.

Table 9 shows and interprets the Test of Significant Relationship between the Extent of Classroom Environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, Classroom Structuring and Design, and Learners' Academic Achievement.

Table 9. Test of Significant Relationship between the Extent of ClassroomEnvironment in terms of Seating Arrangement, Lighting and Color Scheme,Acoustic Environment, Temperature and Air Quality, Use of Technology, andClassroom Structuring and Design and Learners' Academic Achievement						
Variable	r	p-value	Interpretation			
Seating Arrangement,	152	.089	Not Significant			
Lighting and Color Scheme,	094	.294	Not Significant			
Acoustic environment,	150	.091	Not Significant			
Temperature and Air Quality,	033	.714	Not Significant			
Use of Technology,	113	.205	Not Significant			
Classroom Structuring and Design	073	.412	Not Significant			

The table presents the test of a significant relationship between the extent of the classroom environment and learners' academic achievement, revealing that none of the examined variables showed a statistically significant correlation with academic performance.

For Seating Arrangement (r = -0.152, p-value = 0.089), Lighting and Color Scheme (r = -0.094, p-value = 0.294), and Acoustic Environment (r = -0.150, p-value = 0.091), the negative correlation values suggest a slight inverse relationship; however, the p-values indicate that these relationships are not statistically significant. Similarly, Temperature and Air Quality (r = -0.033, p-value = 0.714) showed a very weak negative correlation, with a high p-value, reinforcing its lack of significance. These findings oppose Woolner et al. (2020) found that lighting levels, especially in terms of intensity and color temperature, can affect attention, with cooler-toned lights fostering focus while warmer tones promote relaxation. Classroom color schemes play a significant role in students' emotional responses, potentially affecting their ability to concentrate and retain information.

Likewise, Use of Technology (r = -0.113, p-value = 0.205) and Classroom Structuring and Design (r = -0.073, p-value = 0.412) also demonstrated weak negative correlations, with p-values above the 0.05 threshold, confirming that no significant relationship exists between these variables and learners' academic achievement. Therefore, the null hypothesis states that there is no significant relationship between the extent of the classroom environment in terms of Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature, and Air Quality Use of Technology, and Classroom Structuring and Design learners' academic achievement is accepted.

Gaines, Bourne, and Pearson (2016) concluded that cooler colors like blue and green create a calming atmosphere that aids concentration. In contrast, bright or aggressive colors such as red may increase anxiety or distraction. Their findings align with those of Santos and Guerra (2022), who confirmed that color palettes designed to be conducive to learning—calming, non-distracting tones—lead to more focused learning environments.

This finding is counterintuitive, as previous studies and student perceptions indicated a significant influence of these environmental factors on learning.

Nonetheless, the absence of a significant correlation does not imply that these factors lack relevance. This indicates that, in the current study, no statistically significant relationship was identified.

Additional factors, including teacher quality, student motivation, socioeconomic status, and home environment, may exert a more significant influence on academic achievement. The measurement of academic achievement may not have fully reflected the influence of the classroom environment. The characteristics of the student sample may have impacted on the results. A narrow range of academic scores would hinder the identification of a correlation. The measurement method employed for assessing the classroom environment may lack sufficient sensitivity.

Although a statistically significant correlation was not identified, it remains essential for educators to prioritize the establishment of a positive and conducive learning environment. It is essential to acknowledge the students' perception of these factors as significant. Future research should investigate the intricate relationships between classroom environment factors and additional variables affecting academic achievement. These factors may affect variables that subsequently impact academic achievement. A conducive classroom environment may enhance student engagement, subsequently leading to improved academic achievement.

Statistical significance does not necessarily imply practical significance. Although the statistical analysis did not indicate a direct, significant relationship, the relevance of these classroom environment factors should not be overlooked. Additional research is required to assess their influence on learners' academic performance comprehensively.

### Conclusion

This study examined the relationship between classroom design and its influence on student academic performance in San Fernando I District, Division of Bukidnon, for School Year 2024–2025. It focused on evaluating the extent of implementation of key classroom environment components—Seating Arrangement, Lighting and Color Scheme, Acoustic Environment, Temperature and Air Quality, Use of Technology, and Classroom Structuring and Design—and determining their relationship with learners' academic achievement. A descriptive-correlational research design was employed, using a validated researcher-made questionnaire (Cronbach's Alpha = .944) to gather data from Grade VI learners across large, medium, and small public elementary schools in the district. Data were analyzed using descriptive statistics and Pearson's Product-Moment Correlation Coefficient.

The findings revealed a great extent of implementation across all six classroom environment dimensions, suggesting that schools generally provide well-structured, supportive learning spaces. Despite this, learners' academic performance was rated as "Satisfactory," indicating that while students demonstrated basic comprehension, there remains considerable room for academic growth. Interestingly, the study found no statistically significant relationship between the extent of classroom environment implementation and students' academic achievement, implying that well-designed physical environments alone do not directly translate to improved academic outcomes.

These findings suggest that while physical classroom conditions are important for creating an engaging and conducive learning atmosphere, they may not be sufficient in isolation to drive academic performance. Instructional quality, learner motivation, curriculum relevance, and other pedagogical factors likely play more critical roles in shaping learning outcomes. Therefore, the study recommends that teachers maintain high classroom environment standards while also focusing on evidence-based instructional strategies. Parents are encouraged to support learning both at home and within school initiatives, while school heads are urged to prioritize continuous teacher professional development, research-based pedagogy, and collaborative professional learning communities to enhance student achievement holistically.

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