Learning Environment as a Predictor of Pupils' Academic Performance: Towards A Policy Brief Development

Jesslyn Jane A. Del Rosario & Rodilyn C. Angligen

Ilocos Sur Polytechnic State College Cervantes Campus, Cervantes, Ilocos Sur Bachelor of Elementary Education

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INTRODUCTION

Background of the Study

For a long time, education has primarily focused on curriculum and instruction, often overlooking the significant role of the physical school environment. However, the spaces where students learn classrooms, hallways, schoolyards quietly but powerfully shape their academic performance, behavior, and well-being (Organisation for Economic Co-operation and Development (OECD), 2021).

The significance of the learning environment aligns with Sustainable Development Goal (SDG) 4, which advocates for inclusive, equitable, and quality education. It ensures that students learn in spaces that foster success. Additionally, it supports SDG 3 (Good Health and Well-being), as a clean, safe, and comfortable school environment can enhance student focus and well-being, while poor conditions can lead to stress, illness, and disengagement (United Nation, 2015).

The physical school environment including classrooms, facilities, ventilation, lighting, and spatial organization plays a significant role in shaping students' academic performance, behavior, engagement, and overall well-being (Brink et al., 2021; Sirojiddin, 2025). A well-designed learning environment does not only support cognitive development but also promotes motivation, comfort, and active participation among learners (Salar et al., 2024; Mallillin et al., 2025).These global initiatives highlight that quality education cannot be achieved without adequate learning environments that support both the physical and psychological needs of learners (UNESCO, 2020; UNICEF Philippines, 2022).

Despite global recognition of the importance of learning environments, many schools particularly in developing countries continue to face serious infrastructure challenges such as overcrowded classrooms, inadequate sanitation facilities, poor ventilation, and insufficient learning resources. These conditions negatively affect both teaching quality and student academic performance (UNESCO, 2020; Baafi, 2020; World Bank, 2021). Research further shows that environmental factors such as classroom size, noise levels, lighting conditions, cleanliness, and availability of instructional materials significantly influence student learning outcomes and engagement (Widiastur et al., 2020; Tapia-Fonllem et al., 2020; Brink et al., 2021).

Studies consistently demonstrate that classroom design and environmental quality directly affect student learning experiences. For instance, Barri (2020) found that classroom ownership, layout, lighting, and furniture positively influence student satisfaction, while poor acoustics, temperature, and cleanliness reduce learning comfort. Similarly, Widiastur et al. (2020) identified cleanliness, air circulation, and adequate facilities as major contributors to learning comfort. Sirojiddin (2025) further emphasized that classroom architecture and interior design significantly influence both academic success and emotional well-being. These studies collectively demonstrate that physical learning conditions are critical contributors to effective education.

In the Philippine context, the Department of Education (DepEd) has introduced infrastructure improvement initiatives to ensure that student's study in safe, conducive learning environments. Projects such as the Sanitation Appropriate for Education (SAFE) program aim to eliminate schools without access to water, sanitation, and

electricity (DepEd, 2021). The goal is to provide students with well-maintained classrooms, functional furniture, clean restrooms, proper lighting, and good ventilation (UNICEF Philippines, 2022).

Moreover, despite these initiatives, many public schools especially those in remote and underserved areas continue to experience infrastructure shortages. Persistent issues include classroom congestion, damaged facilities, outdated electrical systems, and lack of instructional resources (DepEd, 2022; World Bank, 2021; Navarro, 2022). Similar concerns were identified by Regidor et al. (2024) found that supportive physical environments significantly improve student motivation, further emphasizing the importance of improving school conditions.

In recognition of the ongoing infrastructure challenges faced by many public schools in the Philippines, to help address these challenges, the Department of Education released DepEd Order No. 42, series of 2017, which introduced the Philippine Professional Standards for Teachers (PPST). One important part of this framework is Domain 2, which focuses on the learning environment, includes six main areas: keeping students safe, treating all students fairly, organizing the classroom and materials well, helping all students take part in lessons, planning activities that are meaningful, and guiding students to behave properly. These areas help teachers find ways to support student learning despite poor classroom conditions. While teachers cannot always fix physical problems in schools, they can make sure that students still learn in a space that is respectful, secure, and focused. This shows that improving how teachers work in the classroom is one way to help solve larger problems in the education system (DepEd, 2017).

Although a lot of studies have established that the physical learning environment influences student motivation, engagement, and academic performance (Baafi, 2020; Salar et al., 2024; Mallillin et al., 2025), some results remain inconsistent. For instance, Abarquez et al. (2025) found that high learner satisfaction with the learning environment did not necessarily result in improved academic performance, while Gaisiey et al. (2025) reported that physical and psychological environments did not significantly predict academic outcomes. These inconsistent results indicate a contradictory results gap, suggesting that the relationship between learning environment and academic performance remains inconclusive and requires further investigation.

Moreover, most existing studies have focused on secondary and higher education learners (Barri, 2020; Ozcan, 2021; Regidor et al., 2024; Florescu 2020), while limited research has examined elementary pupils (Tapia-Fonllem et al., 2020; Conesa et al., 2022; Abarquez et al., 2025). There is a noticeable population gap in research on how the physical environment affects elementary learners, who may be even more sensitive to environmental factors due to their developmental stage (Widiastur et al., 2020).

Additionally, while international studies strongly support the importance of school environments, there remains limited localized research examining the physical and psychological learning environments of elementary learners in the Philippine public-school context (UNESCO, 2020; Panulaya, 2024).

Given these gaps, there is a clear need for more localized and context-specific research focusing on elementary learners, particularly in public schools where environmental challenges are more evident. There is also a need to examine both the physical and psychological dimensions of the learning environment simultaneously, as many previous studies have examined these variables separately. Addressing these gaps would provide a more comprehensive understanding of how learning environments influence academic outcomes among elementary pupils.

This study is therefore timely and necessary as it sought to contribute empirical evidence on how physical and psychological learning environments influence the academic performance of elementary pupils. Specifically, this research aimed to assess learners' satisfaction with the physical and psychological dimensions of their learning environment and determine how these factors relate to their academic performance. By addressing the identified research gaps, the study aimed to provide evidence-based recommendations that may help school administrators, teachers, and policymakers improve learning environments and strengthen educational outcomes.

The study sought to contribute to the growing body of literature emphasizing that improving learning environments is not merely an infrastructure concern but an educational priority essential to promoting student success, well-being, and quality education.

THEORETICAL FRAMEWORK

This study is anchored on Urie Bronfenbrenner's Ecological Systems Theory (1979), which has been widely applied in contemporary educational research to examine how environmental contexts influence student development and learning outcomes (Rosa & Tudge, 2021). The theory posits that a learner's development is shaped by multiple layers of environmental systems, ranging from immediate settings (microsystem) to broader societal influences (macrosystem). To this study, the microsystem specifically, the physical school environment is regarded as a critical component affecting students' academic performance.

Within this framework, physical elements of the classroom and school such as lighting, cleanliness, ventilation, seating comfort, and classroom layout are considered direct influencers of students' daily learning experiences (Rosa & Tudge, 2021; Tudge et al., 2019). These attributes not only affect students' ability to focus and absorb information, but also influence their emotional state, motivation, and overall health factors that are strongly linked to academic outcomes (Miller & Kimmel, 2020; UNICEF Philippines, 2022).

Bronfenbrenner's theory emphasizes the dynamic interaction between the learner and the immediate environment. A well-maintained and supportive school setting encourages student engagement, reduces stress, and promotes positive behaviors thereby enhancing academic performance (OECD, 2021). Conversely, poor infrastructure or unsafe facilities can lead to distractions, absenteeism, and lower academic achievement, particularly among students from low-income or marginalized communities (Baafi, 2020; World Bank, 2021).

This study is anchored to Bronfenbrenner's Ecological Systems Theory because it provides a clear framework for understanding how a child's development is shaped by the different environments they interact with. Among these, the school is considered a key microsystem, where daily interactions and experiences significantly influence learning and behavior. By focusing on the school's physical environment, the study highlights an important yet often overlooked component of this microsystem. The theory supports examining how classroom conditions, infrastructure, and overall learning spaces directly impact students' academic performance. Using this perspective allows the study to take a more holistic approach, recognizing that educational outcomes are not shaped by instruction alone, but also by the physical and social environments in which learning occurs.

In addition, this study also draws on the Self-Determination Theory (SDT) by Edward Deci and Richard Ryan (2000), which centers on the idea that human motivation and well-being are driven by the satisfaction of three fundamental psychological needs: Autonomy – the sense of control and choice in one's actions; Competence – the feeling of being capable and effective, and; Relatedness – the sense of connection and belonging to others.

From an SDT perspective, students' satisfaction with their learning environment whether physical or social is closely tied to how well that environment supports these psychological needs. A classroom that offers choices, promotes student success, and fosters a respectful, safe, and inclusive atmosphere is more likely to enhance learning and motivation. For instance, autonomy is supported when students can choose how to engage in activities; competence is strengthened through clear guidance and feedback; and relatedness grows in an emotionally safe and supportive setting (Deci & Ryan, 2000).

In this study, both the physical environment and its impact on student motivation and academic performance were considered considering how well they satisfy these needs. Thus, SDT complements Bronfenbrenner's theory by providing a psychological lens through which to understand students' experiences within the school setting.

Together, these two theories form a strong conceptual foundation for research. They justify the investigation of both external environmental factors (e.g., infrastructure, facilities) and internal psychological responses (e.g., satisfaction, motivation) in relation to student academic performance.

Figure 1 presents the paradigm of the study that guided the researcher in conducting the study.

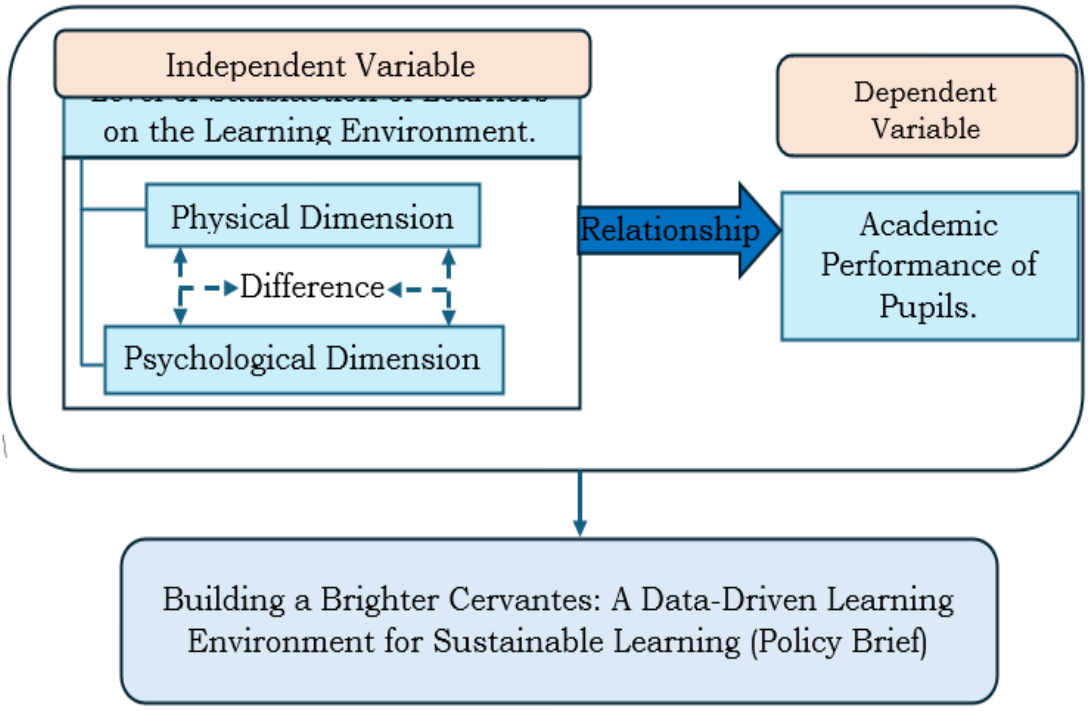

Figure 1. Research Paradigm

Figure 1 presents the research paradigm of the study, which shows the relationship between independent and dependent variables. The independent variable is the Level of Satisfaction of Learners with the Learning Environment specifically looking at its physical and psychological dimensions. This examines the significant difference in the level of satisfaction of learners between the two dimensions of the learning environment. While the dependent variable is the Level of Academic Performance of Pupil this shows that pupils' academic performance is examined in relation to how satisfied they are with their learning environment.

On the right, the Dependent Variable represents the pupils' academic performance. The large arrow labeled "Relationship" connects the two boxes, showing that the study aims to determine if the learning environment is a significant relationship with how well students perform in school. Finally, the downward arrow leads to the research output: a Policy Brief titled "Building a Brighter Cervantes". This output indicates that the results of the research can be used as a basis for recommendations, particularly in improving school infrastructure and learning conditions through data-driven decision-making.

REVIEW OF RELATED LITERATURE

This section presents various studies and literature that help in conceptualization of the study. The study is categorized into theme namely, Satisfaction of Learners with the Learning Environment, Level of Academic Performance of Pupils, and Predictors of Academic Performance of Students.

Satisfaction of Learners in the Learning Environment

The following studies and literature are about the satisfaction of learners in their learning environment. There are two subthemes for this part, the Physical Dimensions and Psychological Dimensions.

Physical Dimension

Physical dimension of learning environment includes school infrastructures and spatial characteristics such as buildings, classrooms, facilities, furniture, lighting, ventilation, and other physical features that support or hinder educational processes (Alvarez, 2024). The following are studies related to Physical Dimension:

Barri (2020) aimed to evaluate the physical aspects of classroom environments in relation to students' needs. The results revealed that students perceived their classroom environment as only moderately suitable. High-scoring elements included ownership, whiteboard availability, layout, desks, lighting, safety, color, and chairs. In contrast, low-scoring aspects were temperature, acoustics, space, air quality, class size, and cleanliness highlighting areas in need of significant improvement. The study highlighted specific physical aspects of the classroom environment in Saudi Arabian public high schools that need attention to better meet student needs. The implications for practice and future research directions suggest that addressing these identified areas of improvement could enhance the learning environment.

Widiastur et al. (2020) aimed to identify and understand the factors that influence student learning comfort in classrooms and how these factors are distributed. This was an explorative study that employed a mixed-methods approach, utilizing both qualitative and quantitative methods. The study found that the key factors influencing student learning comfort in classrooms include air circulation, quietness, cleanliness, adequate and supportive facilities, and peer attendance. These were grouped into two themes: (1) physical environment factors (building and indoor space) and (2) occupant-related factors (human interaction). The indoor space theme, representing factors controllable during classroom structuring, showed the highest influence on learning comfort. Specifically, cleanliness was the most dominant factor within the indoor space theme, followed by air circulation and adequate and supportive facilities. Quietness was the most dominant factor within the human theme.

Yahaya (2025) aimed to examine how the built environment of schools conceptualized as school buildings, ancillary facilities, and didactic equipment affects performance outcomes in basic education. This was a cross-sectional study that sampled 86 public basic schools and 949 learners across three rural districts in northern Ghana. The study found that many schools in these districts lack adequate educational infrastructure, with the severity of these challenges increasing significantly the further a school is located from a capital town or major road. A significant correlation was established between the availability of this infrastructure and student performance outcomes. The study concluded that the quality of the built environment directly impacts learner engagement and academic results, particularly in remote geographical locations. It recommends advocating targeted policy interventions to improve school infrastructure specifically in rural areas to enhance the overall educational experience and performance of learners.

Chen et al. (2024) investigate the effect of the seating condition on learning tasks. This research employed a two-way within-subjects design and involved thirty adults over 20 years old with visual acuity greater than 0.7 and no history of musculoskeletal disease. The results indicated that seat depth and backrest height had an interaction effect on task performance. Sitting on the front third of a chair with a lower backrest produced excellent learning tasks outcomes; seat configuration may affect student performance on learning tasks. Thus, schools can purchase chairs with a lower backrest and require that students use lumbar pads to adjust the seat depth to achieve superior learning task outcomes in classrooms.

Sirojiddin (2025) explored the crucial relationship between classroom design and student learning outcomes. The method involved a review of current research and case studies. The results emphasize that deliberate architectural and interior design decisions directly contribute to both the academic success and emotional well-being of students, specifically highlighting the importance of lighting, seating arrangements, color schemes, acoustics, and flexibility within the classroom. In conclusion, the study asserts that classroom design is a fundamental aspect of effective and inclusive education, recommending that careful consideration be given to these design elements to optimize student learning environments.

Costa et al (2020) aimed to examine the effects of moving to a new campus on students' satisfaction with the physical and learning environments, while also investigating how satisfaction with the physical environment specifically predicts satisfaction with the learning environment. This research utilized a comparative assessment of 771 students, which measured satisfaction across five aspects of the learning environment and five items related to the physical environment. The study found that students were overall more satisfied with the physical environment of the new campus compared to the old one, with the difference being even more pronounced among students in their final year of study. Notably, the results showed that students' satisfaction with lecturers and teaching was predicted by their increased satisfaction with classrooms. The study concluded that the physical environment is a significant factor in higher education satisfaction. The implications of these results suggest a

critical need to purposefully design physical learning environments to enhance students' overall experience with teaching and learning.

Mercugliano et al. (2025) aims of this systematic review was 2-fold: (1) to investigate students' perspectives on listening in different learning contexts, with a focus on noise and reverberation in the classroom; and (2) to investigate the impact of indoor acoustic quality and reverberation on wellbeing. The study found an age-related progression in acoustic awareness, where preschool children showed limited differentiation while older students possessed refined perceptions and greater sensitivity to acoustic quality. The impact of acoustics on wellbeing extends beyond learning to social relationships, motivation, and engagement, with older students exhibiting greater sensitivity than younger students. This review highlights the need for improved acoustic standards, tailored interventions, and awareness programs to improve learning environments and wellbeing.

Salar et al. (2024) aims to explore the impact of classroom design on the academic performance of Grade 3 pupils, focusing on how their perceptions of their learning environment correlate with their academic performance. This study used the descriptive-correlational research design. The results revealed significant correlations between the pupils' perceptions of their classroom environments and their academic performance. Notably, the presence of educational aids and a balanced aesthetic environment in the classroom were associated with increased concentration and comfort, which in turn enhanced learning efficiency. The study concludes that classroom design shapes Grade 3 learners' academic experiences and outcomes. It demonstrates that minimalist classroom walls enhance students' focus and reduce distractions, thus supporting better academic performance. Moreover, the optimal use of lighting and temperature within the classroom significantly impacts students' comfort and concentration, with proper lighting conditions.

The reviewed studies indicate that the physical environment of schools and classrooms significantly influences students' comfort, engagement, and academic performance. Several studies highlight that proper furniture, adequate facilities, cleanliness, and good air circulation enhance students' learning comfort, while issues such as poor acoustics, temperature, and limited space require improvement (Barri, 2020; Widiastur et al., 2020).

Other studies emphasize the relationship between classroom design and academic outcomes. Well-designed classrooms and adequate school infrastructure improve students' concentration, engagement, and academic performance (Salar et al., 2024; Sirojiddin, 2025; Yahaya, 2025). Additionally, specific physical features such as seating design and classroom acoustics can affect learning task performance and student wellbeing (Chen et al., 2024; Mercugliano et al., 2025). Furthermore, students' satisfaction with the physical environment contributes to their overall satisfaction with the learning environment (Costa et al., 2020).

Most of the existing literature primarily focuses on international contexts and examines specific aspects of the classroom environment such as infrastructure, acoustics, seating conditions, and classroom design (Sirojiddin, 2025; Widiastur et al., 2020; Costa et al., 2020; Mercugliano et al., 2025; Yahaya, 2025), there still a limited studies in the Philippines (Salar et al., 2024). The studies suggest that improving the physical aspects of classrooms and school facilities plays an important role in supporting students' learning experiences, comfort, and academic success.

Psychological Dimension

The mental and emotional processes of learners that influence how they perceive, experience, and engage in the learning environment. This dimension focuses on factors such as motivation, emotions, self-efficacy, attitudes, sense of belonging, and perceptions of the classroom climate, which shape students' learning behaviors and academic outcomes (Mindo and Paglinawan, 2025). The following are studies related to Psychological Dimension:

Benlahcene et al. (2021) examined the relationship between the satisfaction of students' basic psychological needs including novelty satisfaction and the four dimensions of student engagement. Structural equation modelling (SEM) was used to analyze the data. Their study found that competence and relatedness were positively associated with all four engagement types, while autonomy was specifically linked to agentic engagement. Novelty satisfaction was positively correlated with behavioral, emotional, and cognitive

engagement. The research underscores the importance of novelty satisfaction as a significant factor alongside established basic psychological needs in fostering student engagement. It recommends that educators develop strategies to support novelty and facilitate the satisfaction of basic needs to create a highly motivating and engaging learning environment.

Quansah et al. (2022) examined the perceived safety of the learning environment and associated anxiety factors among physical education students amidst COVID-19. This research utilized a cross-sectional design, with the 638 students selected purposively and conveniently from a public university in Ghana. The study found that students perceived their practical lesson environments as unsafe and reported moderate to high levels of anxiety, with factors such as age, information platforms, certainty about personal safety, and adequacy of COVID-19 preparation significantly predicting these anxiety levels. The study concluded that an unsafe practical learning environment directly increases situational-specific anxiety among students.

Wentzel et al. (2021) used meta-analytic techniques to systematically examine the evidence linking peer social acceptance to academic achievement. Based on 72 studies yielding 157 effect sizes, the researchers analyzed the relations between social acceptance and academic outcomes, such as grades and test scores, while testing for various moderators (sex, grade level, culture, and measurement strategies) and mediators (motivation and active engagement). The study found a medium effect size, indicating that peer social acceptance is significantly and positively related to academic achievement, with the strongest relations observed among younger students, students from Asian countries, and in classroom-based assessments. Additionally, the results showed that academic-specific self-beliefs, negative affect, and active engagement serve as partial mediators in this relationship. The study concluded that social standing within the peer group is a meaningful predictor of academic success.

Kilday et al. (2025) investigated how early adolescents' classroom friendships were related to their engagement (behaviour, emotion and peer help-seeking). This research utilized multilevel modelling with a sample of 824 fifth and sixth graders from 46 classrooms in the United States. The study found that while the sheer quantity of reciprocated friendships was unrelated to engagement, engagement was positively associated with both best friendship quality and friendship centrality (being well-connected). Additionally, the results showed that being highly desired as a friend (prestige) did not negatively impact behavior when popularity norms favored prosocial actions. The study concluded that not all aspects of friendship are equal in their impact on learning.

Conesa et al. (2022) conducted a systematic review on the association between basic psychological needs and outcomes such as motivation, well-being, engagement, and academic performance in elementary and middle school students. While studies show that satisfying psychological needs is linked to greater intrinsic motivation and engagement, the evidence isn't strong enough to confirm a positive influence on the well-being and academic achievement of elementary school students. This is primarily due to a lack of methodologically sound research in these areas. Nevertheless, the results emphasize that teachers are vital in supporting the psychological needs of all students, from young children to early adolescents. Further experimental research is critical to fully explore how educators can utilize need-supportive strategies to improve children's motivation, well-being, engagement, and academic outcomes within their communities.

Mahoney et al. (2021) aimed to summarize the key concepts and evidence for systemic Social and Emotional Learning (SEL), an approach designed to create equitable learning conditions and foster social, emotional, and academic competencies for all Pre-K to Grade 12 students. This research utilized a theoretical and evidence-based review, explaining interrelated Theories of Action and resources developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL). The study found that systemic SEL requires aligned policies and resources to build adult capacity, implement evidence-based programs, and foster inclusive cultures that promote youth voice and agency. It concludes with recommendations for future SEL research, practice, and policy.

Cambay et al. (2024) investigate the relationship between classroom management strategies, school environment, and student engagement at San Nicolas National High School during the 2024-2025 academic year. This research employed a descriptive correlational research design involving 145 junior high school students who were randomly selected to represent diverse backgrounds. The study found that students perceive

classroom management strategies as effective, specifically in the areas of discipline, teaching and learning, and personal behavior, While the school environment was also viewed positively, the results indicated that the social environment is an area for improvement. Correlation analyses revealed strong positive relationships between student engagement and both classroom management strategies and the school environment. The study concluded that a supportive academic and social atmosphere is essential for enhancing student involvement.

Regidor et al. (2024) studied the impact of a supportive learning environment on student motivation at Tubod National High School in Davao del Norte. This study used the descriptive-correlational research design. Results indicated that students were more motivated in environments perceived as supportive. A moderately positive correlation was observed between learning environmental quality and student motivation. The study emphasizes the significance of providing a supportive learning environment in the classroom.

Tapia-Fonllem et al. (2020) explained the relationship between school environment and the well-being of primary education students. The methodology involved a correlational design, surveying 405 students from four public elementary schools. The spatial organization of primary school buildings affects children's perception, behavior, and cognitive development. Flexible and adaptable spaces were found to contribute positively to students' spatial awareness and social interaction, further reinforcing the importance of thoughtful school design. The results implicitly suggest that creating and maintaining supportive educational spaces across physical, academic, and social aspects is vital for enhancing student well-being.

The reviewed studies highlight the importance of the psychological and social dimensions of the learning environment in shaping student engagement, motivation, and well-being. Studies show that the satisfaction of students' psychological needs such as competence, autonomy, relatedness, and novelty plays a significant role in promoting behavioral, emotional, and cognitive engagement in learning (Benlahcene et al., 2021; Conesa et al., 2022). In addition, supportive educational approaches such as Social and Emotional Learning (SEL) help develop students' social, emotional, and academic competencies by fostering inclusive and supportive school cultures (Mahoney et al., 2021).

Social relationships within the classroom also influence students' learning experiences and academic outcomes. Peer social acceptance and high-quality friendships are positively associated with engagement and academic achievement, highlighting the role of social interactions in the learning process (Wentzel et al., 2021; Kilday et al., 2025). Furthermore, studies emphasize that a supportive and well-managed classroom environment enhances student motivation and participation, while unsafe or poorly managed environments may increase anxiety and negatively affect learning (Quansah et al., 2022; Cambay et al., 2024; Regidor et al., 2024).

Even though experts agree that classroom design and social support are important (Sirojiddin, 2025; Mahoney et al., 2021; Tapia-Fonllem et al., 2020; Quansah et al., 2022; Cambay et al., 2024; Regidor et al., 2024), but there is no research that looks at the combined impact of these factors within the Cervantes District.

The studies suggest that addressing students' psychological needs, strengthening social relationships, and maintaining supportive learning environments are essential for improving student engagement and overall learning experiences.

Level of Academic Performance of Pupils

The following studies and literature are about the level of academic performance of pupils.

Baafi (2020) examined and compared the effect of the school physical environment on the academic achievement of senior high school students in Ghana and investigated how student characteristics influence performance within this context. It utilized descriptive survey research design, and a regression model was employed to determine relationships between variables, with data analyzed using descriptive and inferential statistics with SPSS. The results confirmed that students in senior high schools with a pleasant physical environment demonstrate better academic performance than those in less conducive settings. The research established that adequate school facilities contribute to a positive educational climate favorable for student learning. The regression model, accounting for 89.1% of the variance in student performance, indicated that factors like well-

furnished classrooms, reliable electricity (via generators), and accessible school libraries positively relate to student outcomes. The study determined that the physical school environment is a statistically significant predictor of student academic performance.

Al-Rousan (2023) sought to determine the relationship between psychological stability and academic performance among secondary school students in the Irbid Governorate, Hashemite Kingdom of Jordan. This research utilized a descriptive analytical approach, the population consisted of high school pupils in the Irbid Governorate, from which a sample of 291 students was randomly selected. The study found that the level of psychological stability among the participants was medium, with a mean score of 3.3849. The results also indicated that psychological stability in its dimensions has a statistically significant impact on academic performance and that there is a strong positive direct association between psychological stability in its dimensions and academic performance.

Anaman (2022) examined how school infrastructure affects academic achievement in four Ghanaian senior high schools, using constructivism and production theory as the theoretical framework. This research utilized a mixed-methods approach, obtaining data through both interviews and questionnaires conducted with students and teachers. The survey revealed that schools required sports fields, music rooms, church halls, mosques, and theatres. The study found that schools required additional dorms and bathrooms. The research uncovered that schools require updated classrooms, roomy scientific labs, and more cocurricular activities beyond outdoor games and computer labs. The study also indicated that learning, boarding, and co-curricular infrastructure improved student achievement. The interviews showed that SHS teachers believed school infrastructure improves academic achievement. The study suggests building and positioning school structures well and stocking and expanding school laboratories to serve all pupils to increase academic performance. To facilitate subject instruction, the school's ICT lab needs extra computers and supplies to facilitate more effective subject instruction.

Mallillin et al. (2025) aimed to determine the factors that influence student learning comfort in the classroom and its distribution. The method utilized a descriptive qualitative research design. The results indicate that classroom design significantly influences student learning engagement, which in turn improves individual performance and guides learners toward academic achievement. Specifically, the promotion of student engagement through design helps control the learning process, fosters participation, enthusiasm, and concept mastery, and creates a conducive atmosphere for students as centers of learning.

UNICEF Philippines (2022) reported on school infrastructure conditions and their effects on learning recovery in the post-pandemic context. Schools with well-maintained facilities transitioned more effectively to hybrid learning, while those with poor infrastructure experienced slower academic recovery. The report underlined that investment in school infrastructure is vital not only for learning continuity but also for long-term academic progress.

Abarquez et al. (2025) assessed the satisfaction of multigrade pupils by considering teacher, student, and learning environment factors. This research used a descriptive-correlational quantitative design. The results showed that multigrade pupils expressed high satisfaction with the teaching-learning process across all three factors (teacher, student, and learning environment), and their academic performance was satisfactory. However, the correlation analysis indicated no significant relationship between the pupils' satisfaction levels and their academic performance. The study determined that high satisfaction in the teaching-learning process did not guarantee an impact on academic performance. Further research is needed to identify other factors that influence the academic performance of multigrade pupils.

The reviewed studies emphasize that academic performance is influenced by various environmental, psychological, and instructional factors. Several studies highlight the importance of the physical school environment and infrastructure in supporting student achievement. Adequate facilities, well-furnished classrooms, reliable electricity, and accessible learning resources create a positive educational climate that enhances students' academic performance (Baafi, 2020; Anaman, 2022). Similarly, well-designed classrooms promote student engagement, participation, and concept mastery, which contribute to improved learning outcomes (Mallillin et al., 2025). Reports also indicate that schools with well-maintained infrastructure were

better able to support learning continuity and academic recovery, particularly in post-pandemic contexts (UNICEF Philippines, 2022).

In addition, psychological stability has been found to have a strong positive relationship with academic performance, indicating that emotionally stable students tend to perform better in school (Al-Rousan, 2023). However, some studies suggest that positive perceptions of the teaching-learning process do not always directly translate to improved academic performance, implying that other factors may also influence student outcomes (Abarquez et al., 2025).

The results suggest that both supportive learning environments and students' psychological well-being are important in promoting academic success.

Predictors Affecting Learners' Academic Performance

The following studies and literature are about predictors affecting academic performance of pupils.

Ozcan (2021) identified and revealed the opinions of high school teachers regarding the various factors that influence students' academic achievement. The research adopted a qualitative case study design. Several key factors impact students' academic success, including family education level, school's physical conditions affecting learning and creativity, the overall school environment influencing motivation and social effects, and teachers themselves through their competence, role modeling, communication, attitude, motivation, and guidance. The study effectively identifies these multifaceted factors as crucial determinants of academic achievement from the teachers' perspective. Implicitly, it recommends that educational stakeholders focus on improving these identified areas like family involvement, school infrastructure, overall school climate, and teacher quality, to enhance student academic success.

Brink et al. (2021) aimed to determine the influence of four indoor environmental parameters indoor air, thermal, acoustic, and lighting conditions on the quality of teaching and learning and on students' academic achievement in schools for higher education, defined as education at a college or university. It utilized systematic review of literature. The study conducted a review on indoor environmental quality (IEQ) and its impact on student learning. They found that good IEQ positively influenced short-term academic performance, though evidence for long-term effects remained inconclusive. They also noted that optimal learning conditions vary depending on the task, suggesting that flexible classroom environments may best support diverse learning needs. The study confirmed IEQ's positive impact on short-term academic outcomes and learning quality and that decision-makers in facility management and building systems engineering enhance IEQ, potentially through flexible classroom designs that can adapt to different IEQ conditions to optimize various learning tasks.

Tareen et al. (2020) study was carried out to analyze the impact of the school environment on students' academic achievement and performance, examining various direct and indirect factors such as infrastructure, atmosphere, gender, and relationships. This research utilized a survey method for data collection, targeting a population of teachers from different schools in Quetta city. Most of the teachers agreed that school environment has a positive effect on student's academic achievement while a few teachers believed that school environment also effects student's achievement negatively. The study concluded that the overall environment is a significant determinant of student success.

Aneke (2022) aimed to investigate the influence of learning environment on academic performance of secondary school students in Makurdi metropolis of Benue State. This research employed a descriptive survey design, targeting a population of 2,090 students, from which 399 students were randomly selected from 30 secondary schools. The study found that adequate infrastructure allows students to learn with ease (3.82), while poor physical facilities, obsolete teaching techniques, and overcrowded classrooms (3.67) lead to poor academic achievement. Additionally, the results showed that external factors, such as parental occupational status (3.38) and the availability of educational facilities at home (3.43), significantly affect learning progress. The study also revealed that teacher indiscipline (3.50) retards performance, whereas students taught by trained professionals (3.42) perform better. The study concluded that the learning environment is a decisive factor in student

performance. The Benue State Government provide adequate school facilities, and that the PTA, philanthropists, and charitable organizations complement these efforts by contributing to modern learning infrastructure.

Edgerton et al. (2023) aimed to measure students' subjective perceptions of their physical school environment and explore how these perceptions along with socioeconomic status (SES), gender, and attendance relate to academic achievement. This research was conducted with 441 S5 students in five secondary schools in Scotland. Regression analysis indicated that students' subjective perceptions of the physical environment are significantly related to academic achievement, alongside the more traditional predictors of attendance, gender, and SES. Furthermore, the study found that the relationship between environmental perceptions and achievement is mediated by "in-school behaviors," specifically engaging behavior and environmental difficulty. The study concluded that the physical learning environment has both direct and indirect relationships with student success.

Kassab et al. (2024) explored the relationships between the educational environment, student engagement, and academic achievement in Health Professions Education (HPE), specifically examining how engagement acts as a mediator. This research utilized a cross-sectional design, collecting data from 554 HPE students via self-report questionnaires. The study found that four educational environment subscales directly affected emotional engagement, while academic self-perceptions significantly influenced behavioral and cognitive engagement. results showed that while behavioral and cognitive engagement positively influenced GPA, emotional engagement had a negative influence. Furthermore, cognitive and behavioral engagement were found to mediate the relationship between students' academic self-perceptions and their academic achievement. The study concluded that perceptions of the educational environment are significant drivers of student engagement, which in turn directly affects and mediates academic success.

Mohamad (2024) investigated the specific indicators of the learning environment that significantly influence the academic engagement in science among junior high school students. This research employed a quantitative descriptive correlational design involving 142 junior high school students selected through universal sampling. The study found that both the learning environment and academic engagement in science were at high levels and identified a significant relationship between the two. Specifically, the indicators that significantly influenced academic engagement were the enjoyment of science lessons and investigation. The study concluded that cultivating a positive, enjoyable experience and promoting hands-on investigation are vital to the educational process. The recommendations suggest that schools foster an improved overall learning environment, teachers refine their instructional delivery, and science activities be aligned more closely with student needs to enhance science education.

Garcia (2025) investigated the relationship between study habits, learning environment, and mathematics performance among 303 Grade 11 STEM students. This research employed a descriptive-causal research design to examine factors influencing academic success in a cornerstone STEM subject. The study found that while students possessed high motivation and a supportive classroom atmosphere, their mathematics performance fell within the "proficient" level. Notably, among the factors studied, only peer collaboration showed a statistically significant influence on performance. The regression model revealed that these factors explained only 3.8% of the variance, suggesting that other elements like instructional quality and cognitive ability may play larger roles. The study concluded that academic achievement in mathematics is highly complex and not solely determined by study habits or general environment. It suggests the need for comprehensive, targeted interventions and further research into unexamined factors such as parental involvement and instructional quality to better support STEM students.

Panulaya (2024) identified the factors influencing learners' academic performance, specifically focusing on teacher and learner-related factors, in Balingasag Central District (Division of Misamis Oriental) using a descriptive-correlational research design. Factors affecting academic outcomes were grouped into school-related (e.g., infrastructure and learning skills), teacher-related (e.g., teaching style and personality), and learner-related (e.g., motivation, peer influence). The study found a significant relationship between these categories and academic performance. The study found that there is a significant relationship between the school, teacher, and pupils-related factors on the academic performance of the Grade six students within the Kinoguitan District. Educational institutions should prioritize conducive and adequate learning infrastructures and libraries through technology integration and resource provision, while teachers enhance English, Science, and Math instruction

with advanced, hands-on, and real-world applications, and subject coordinators and teachers collaborate on innovative strategies to address low academic performance.

Gaisiey et al. (2025), examined the relationship between the learning environment specifically its physical, social, and psychological aspects and the academic performance of students in integrated science courses at colleges of education in Ghana's Central Region. The method employed a quantitative approach. The results revealed that the physical, social, and psychological learning environments did not significantly predict students' academic performance. Furthermore, students' average performance in assessment and integrated science courses fell short of expectations, indicating that academic achievement is influenced by factors beyond just the learning environment, such as teaching quality and student engagement. The study recommends that educational institutions should prioritize improving the learning environment through better lecture room configurations, providing adequate teaching resources, and fostering positive connections between students and teachers.

Research shows that academic performance is shaped by the learning environment, instructional quality, social interactions, and psychological factors. Adequate school facilities, well-designed classrooms, and supportive learning atmospheres promote engagement and motivation, which in turn improve achievement (Ozcan, 2021; Brink et al., 2021; Aneke, 2022; Mohamad, 2024; Garcia, 2025). Peer collaboration and teacher guidance also influence performance, especially in STEM subjects (Garcia, 2025; Panulaya, 2024). However, lack studies indicate that the environment alone cannot fully predict outcomes, emphasizing the combined role of teaching quality, engagement, and student factors in academic success (Gaisiey et al., 2025).

Although previous research has established that learning environments and school infrastructure can significantly influence students' academic achievement (Baafi, 2020; Tareen et al., 2020; Brink et al., 2021; Aneke, 2022), some studies report non-significant relationships between learning environment factors and academic performance, indicating inconsistent results that require further investigation (Abarquez et al., 2025; Gaisiey et al., 2025; Garcia, 2025).

The results of the studies suggests that academic performance is a multidimensional outcome shaped by environmental, psychological, and educational factors within the learning context.

All the reviewed literatures and studies collectively affirm that the physical learning environment and psychology play a critical role in shaping academic outcomes. This gap highlights the need for empirical research that captures the unique challenges and realities of elementary schools in rural or underserved areas. By addressing this need, the current study aims to contribute localized, evidence-based insights into how physical and psychological learning environments affect academic performance, ultimately informing policy and school improvement strategies.

Statement of the Problem

This study aimed to identify the learning environment factors that predict student academic performance, with a focus on how various environmental conditions are associated with learning outcomes.

It sought to examine both physical and psychological dimensions of the learning environment and their relationship to academic performance. Specifically, the study sought to answer the following research questions:

1. What is the level of satisfaction of learners with the learning environment, in terms of:

a. Physical dimension; and,

b. Psychological dimension?

2. What is the level of academic performance of pupils?

3. Is there a significant relationship between the level of academic performance and the level of satisfaction of learners with the learning environment?

4. Is there a significant difference in the level of satisfaction of learners between the two dimensions of the learning environment?

5. Do the physical and psychological dimensions of the learning environment significantly predict students' academic performance?

6. What policy brief can be developed based on the results of the study?

Hypotheses

The study is guided by the following null hypotheses:

1. There is no significant relationship between the level of academic performance and the level of satisfaction of learners with the learning environment.

2. There is no significant difference in the level of satisfaction of learners between the physical and psychological dimensions of the learning environment.

Importance of the Study

The results of this study may provide meaningful insights and practical implications for the following stakeholders:

The school administrators. The study may provide school leaders with evidence-based recommendations for improving physical facilities. The results can guide administrators in prioritizing infrastructure projects and promoting cleaner, safer, and more conducive learning spaces for students and teachers alike.

The policy makers. The results may inform both local and national policymakers about the impact of school infrastructure on student academic outcomes. This could support data-driven policy reforms and increased budget allocation for upgrading and maintaining school facilities.

The students. This study may help students recognize how their surroundings impact their grades. By identifying environmental factors that help or hinder them, students can better adapt their study habits and coping strategies to their current classroom setting.

The teachers. The results may provide teachers with insights into how classroom conditions affect student success. This can inspire them to improve classroom management and make simple, low-cost physical changes that create a more motivating space for learning.

The community. The study may highlight the importance of community involvement in maintaining school environments. It may promote collaborative efforts such as clean-up drives, donations, and volunteer work, fostering a sense of ownership and pride in public educational institutions.

The future researchers. This study may serve as a useful reference for future investigations exploring the relationship between the physical learning environment and academic performance. It may also encourage further localized, comparative, and interdisciplinary research in diverse educational contexts.

Definition of Terms

The following key terms are defined to clarify their usage within the context of this study:

Learning Environment. This refers to the physical and psychological conditions of the classroom and school setting that influence students' academic experiences. This includes features such as lighting, ventilation, seating arrangement, and overall classroom atmosphere and psychological aspect encompasses students' sense of safety, belonging, motivation, and emotional well-being.

Physical Dimension. In this study, this refers to tangible classroom features assessed through a student questionnaire. It includes satisfaction with aspects such as seat arrangement, lighting brightness, noise levels, ventilation, and the availability and functionality of learning materials like books and computers.

Psychological Dimension. This pertains to students' feelings, attitudes, and beliefs about learning and their classroom environment. It was measured through a questionnaire addressing aspects like motivation, engagement, comfort in asking questions, sense of safety and belonging, and confidence in learning.

Level of Academic Performance of Pupils. This was measured using students' most recent grades as recorded on their report cards. It serves as the primary indicator of academic success in relation to their learning environment.

Predictors of Academic Performance. These are specific variables such as physical and psychological aspects of the learning environment that the study were investigated to determine whether they significantly influence students' academic outcomes.

Policy Brief. This refers to the final output of the study: a concise, evidence-based document summarizing the research results and providing practical recommendations for improving school learning environments.

METHODOLOGY

This chapter presents the procedures undertaken to achieve the objectives of the study. It includes the research design, locale and population, research instruments, data gathering procedure, data categorization, statistical treatment, and ethical considerations.

Research Design

This study utilized a descriptive-correlational and descriptive-comparative. Descriptive correlational is a research approach where primary focus is on describing the relationships among variables without attempting to establish a casual connection (Putri et al., 2025). This design allowed the researcher to examine and describe if there's a significant relationship between the level of academic performance and the level of satisfaction of learners with the learning environment.

Descriptive comparative compares two or more groups or phenomena to highlight differences and similarities (Hassan, 2023). This design allowed the researcher to examine if there is a significant difference in the level of satisfaction of learners between the two dimensions of the learning environment. This approach provided insights into how the level of satisfaction might influence the two dimensions.

Locale and Population of the Study

The study was conducted in Cervantes District total of 22 schools, located in Cervantes, Ilocos Sur. The population of the study consists of Grade 6 students currently enrolled in selected public elementary schools within the district.

Name of Schools		Number of Enrollees	Sample	Actual Respondent
	Aluling Elementary School	21	10	10
	Bissayot Elementary School	15	8	8
	Biwak Elementary School	4	2	0
	Cabaroan Elementary School	19	10	10

	Cervantes Central School	37	20	20
	Comillas North Integrated School	30	15	15
	Comillas South Elementary School	32	17	17
	Daing Integrated School	24	13	13
	Dinwede Elementary School	3	2	0
.	Libang Elementary School	19	10	0
.	Lamagan Primary School	4	2	2
.	Liqueo Elementary School	8	4	4
.	Malaya Elementary School	7	4	4
.	Namaligan Elementary School	4	2	0
.	Naiba Elementary School	4	2	0
.	Paang Elementary School	5	3	3
.	Pilipil Elementary School	10	5	5
.	Quinayad Elementary School	6	3	3
.	Rosario Elementary School	27	15	15
.	San Juan Elementary School	40	21	20
.	Tagpeo Elementary School	5	3	0
.	Zigzag Pines Elementary School	19	10	0
Total		343	181	149

The respondents were selected using stratified random sampling to ensure fair representation across different sections or schools at the Grade 6 level.

This study initially targeted a total population of 181 respondents. However, during the data collection phase, the final sample was reduced to 149 participants, representing a response rate of approximately 82%. This decrease was due to uncontrollable field constraints, specifically instances where certain schools were unable to provide the necessary academic records and cases where survey questionnaires were not returned by the learners.

Research Instrument

A survey questionnaire was used to gather data on Grade 6 students' satisfaction with the physical and psychological dimensions of their learning environment. The questionnaire was composed of two parts: The first part includes 18 items measuring satisfaction related to the physical dimension (e.g., lighting, cleanliness, ventilation, classroom arrangement). The second part contains 17 items assessing the psychological dimension, focusing on motivation, engagement, sense of safety, and classroom relationships (See appendix D). The instrument undergone expert validation to ensure content relevance and alignment with research objectives (See appendix F).

Data Gathering Procedures

A formal request letter was submitted to the respective school heads of the participating schools in the Cervantes District to seek approval for the administration of the research instruments (see Appendix A). Upon approval, the survey questionnaires were personally distributed and retrieved by the researcher to ensure a high response rate and data accuracy. Additionally, the most recent academic grades of the Grade 6 pupils were requested from their respective advisers for the purpose of determining their level of academic performance. All collected data were then carefully tallied, analyzed, and interpreted in accordance with the objectives of the study.

Statistical Treatment

The following statistical tools were employed to analyze the data.

To determine the level of student satisfaction in both the physical and psychological dimensions of the learning environment, the weighted mean was used.

The students' academic performance was interpreted using frequency count and percentage.

To assess the relationship between the level of academic performance and learners' satisfaction with the school environment, the Pearson r Correlation was used.

To determine if there is a significant difference between the satisfaction levels in the physical and psychological dimensions, the Independent Samples t-test was used.

A Regression Analysis was used to examine whether the two dimensions (physical and psychological) significantly predict students' academic performance.

The quantitative is further explain by an interview to support the results of the quantitative.

Data Categorization

To describe the level satisfaction of respondents the following scale was utilized.

Range	Descriptive Rating	Interpretation
1.00 – 1.75	Very Dissatisfied	The respondent is satisfied with the physical environment by approximately 25%.
1.76 – 2.50	Dissatisfied	The respondent is satisfied with the physical environment by approximately 50%.
2.51 – 3.25	Satisfied	The respondent is satisfied with the physical environment by approximately 75%.
3.26 – 4.00	Very Satisfied	The respondent is satisfied with the physical environment by approximately 100%.

To describe the level of academic performance of pupils the following scale was utilized from the DepEd Order 8, s. 2015.

Grade Range	Descriptive Rating
90 – 100	Outstanding

85 – 89	Very Satisfactory
80 – 84	Satisfactory
75 – 79	Fairly Satisfactory
Below 75	Did Not Meet Expectations

To interpret relationship between academic performance and satisfaction with the learning environment the following scale was utilized.

Correlation Coefficient	**Interpretation**
± 0.90 to 1.00	Very High Positive / Negative Correlation
± 0.70 to 0.89	High Positive / Negative Correlation
± 0.50 to 0.69	Moderate Positive / Negative Correlation
± 0.30 to 0.49	Low Positive / Negative Correlation
± 0.00 to 0.29	Very Low Positive / Negative Correlation

Ethical Considerations

This study upheld ethical standards to protect the rights, dignity, and well-being of all participants. Prior to data collection, respondents were fully informed about the purpose, procedures, and potential risks or benefits of the study. Assent form was obtained, and participation were voluntary, with no coercion or pressure applied to the participants at any stage (See appendix C).

The confidentiality and anonymity of all participants were strictly maintained. To ensure privacy, participants in the interview are referred to using codes, such as P1, P2, and so on, throughout the report. Personal information and responses were kept private and were used solely for research purposes. The data were stored securely and were not disclosed to unauthorized individuals.

The researcher followed all institutional ethical guidelines and secured the necessary ethical clearance or approval from the appropriate review board before conducting the study.

To ensure the academic integrity of the research, all sources were properly cited and acknowledged, avoiding any form of plagiarism. The researcher ensures to presenting results honestly and objectively, without fabrication or manipulation of data, and indicated any potential conflicts of interest that may affect the credibility of the study.

RESULTS AND DISCUSSIONS

This chapter presents the results, interpretation, conclusions, and recommendations.

Table 1a. Level of Satisfaction of Learners with the Learning Environment in terms of Physical Dimension

INDICATORS	**WM**	**DE**
The classroom has enough comfortable chairs with desks.	3.89	VS
The classroom has a functional blackboard.	3.79	VS
The classroom has a functional whiteboard.	3.36	VS
The classroom has sufficient lighting.	3.53	VS
The desks and chairs are properly arranged.	3.48	VS
The classroom has proper airflow.	3.56	VS
The classroom has enough space for activities.	3.50	VS
The furniture is arranged in the proper place.	3.58	VS
The classroom decorations are well arranged.	3.51	VS
The classroom has the right number of students.	3.56	VS
The area outside the classroom is quiet during class.	3.40	VS
The inside of the classroom is quiet when the teacher is teaching.	3.24	S
The classroom floor is not slippery.	3.23	S
The classroom has easy access to learning areas.	3.37	VS
The classroom has proper storage for personal belongings.	3.60	VS
The classroom has clean drinking water.	3.59	VS
The school has clean restrooms.	3.12	S
The classroom is well-ventilated.	3.31	VS
AWM	**3.478**	**VS**

Legend: VS- Very Satisfied; S- Satisfied

Table 1a shows the level of satisfaction of learners with the school learning environment in terms of physical dimensions is “Very Satisfied” with an average weighted mean of 3.478. This means that learners perceive the physical conditions of their school learning environment as comfortable, supportive, and conducive to learning, indicating that most of the facilities such as classrooms, furniture, lighting, ventilation, and other physical resources are adequately provided and meet their needs, which helps create a positive and effective atmosphere for their academic activities.

The results are supported by international large-scale data from the Organisation for Economic Co-operation and Development (2023), which reported that positive and supportive school environments, including adequate infrastructure and learning spaces, are strongly associated with improved student performance and well-being.

This is also supported by Yahaya et al. (2025), who found that the condition of school facilities and the overall physical environment significantly influence students' learning experience, satisfaction, and academic outcomes, especially when classrooms are safe, clean, and properly maintained.

The results imply that schools should continue to maintain and improve their physical environment, as it plays an important role in helping students feel comfortable and ready to learn. Clean, safe, and well-maintained classrooms can increase students' interest, focus, and participation in class. Furthermore, the results suggest that school heads and staff should consistently prioritize school facilities and classroom conditions, as these contribute to improved learning, greater student satisfaction, and a more positive overall school experience.

The indicator "The classroom has enough comfortable chairs with desks" got the highest mean of 3.81 with the descriptive equivalent of "Very Satisfied". This means that most learners feel that the chairs and desks in their classroom are enough and comfortable for them to use, which helps them sit properly, feel relaxed, and focus better during class. It also shows that having good seating supports students in doing their school tasks more easily and makes their learning experience more positive.

The results are supported by previous studies showing that appropriate seating design including comfortable seating, proper chair depth, and suitable backrest height—plays an important role in improving students' emotional well-being, reducing physical discomfort, and enhancing concentration and classroom satisfaction. Moreover, chair depth and backrest height were found to significantly affect students' performance in tasks requiring concentration, highlighting the importance of proper seating design in improving academic outcomes (Sirojiddin, 2025; Chen & Tsai, 2024).

Similarly, Ahmad et al. (2024) emphasized that non-ergonomic classroom chairs can lead to discomfort and posture-related issues, while ergonomically designed seating improves students' well-being and reduces musculoskeletal risks. Supporting this, Incekara (2022) noted that improperly designed classroom furniture that does not match students' body measurements negatively affects their physical health and comfort, stressing the need for anthropometric-based design in schools.

Recent results of Zhang et al. (2025) also indicate that classroom design elements, including seating arrangements and furniture, significantly influence students' attention, mood, and overall classroom experience. This implies that schools should continue to provide enough comfortable and well-designed chairs and desks for students. Schools are encouraged to regularly check, repair, and improve classroom furniture to make sure it fits students properly and remains comfortable to use. Providing good seating can help students stay focused, avoid body pain, and participate more in class.

The indicator "The classroom has a functional blackboard" got the second highest mean of 3.79 with the descriptive equivalent of "Very Satisfied". This shows that is likely because the blackboard serves as the primary visual anchor for instruction, and its functionality directly impacts the clarity of information delivery. This is supported by Barri (2020), who identifies the availability of instructional tools like whiteboards and blackboards as a high-scoring element that meets students' core needs. Salar et al. (2024) also emphasize that the presence of such educational aid creates a balanced environment that enhances learning efficiency.

The results imply that schools should continue to maintain blackboards in good condition because clear and visible boards help teachers present lessons effectively and help students understand the discussion better. Schools are recommended to regularly inspect, clean, repair, and replace worn-out or unclear blackboards to ensure continuous support for teaching and learning. Providing functional instructional tools can improve lesson clarity, increase student attention, and support better academic performance.

The indicator "The classroom has proper storage for personal belongings" got the third highest mean of 3.60 with descriptive equivalent of "Very Satisfied". This means that learners feel that the classroom provides enough and appropriate space where they can safely keep their bags and personal items, which helps them stay organized and avoid distractions during class. This aligns with the results of Costa and Steffgen (2020), who argue that organized personal spaces and adequate room capacity directly influence how students perceive teaching quality and their overall learning experience.

Recent research supports this connection between the physical learning environment including spatial design and availability of functional facilities and student satisfaction, engagement, and perceived learning quality. For example, studies have shown that classrooms with humanized facilities and comfortable, organized spaces significantly enhance students' informal learning experiences and overall perception of the learning environment (Sun and Firzan, 2024), while flexible space and furniture design, which often includes adequate personal storage space, positively influence students' classroom satisfaction and adaptability to different learning activities (Jin and Peng, 2022).

Moreover, literature on classroom environment theories highlights that physical element such as space allocation, accessibility of materials, and overall organization play a crucial role in fostering a positive classroom climate conducive to effective learning (Merritt, 2024). This implies that schools should continue to provide proper, safe, and accessible storage spaces for students' personal belongings to help maintain an organized and distraction-free classroom. Schools may strengthen storage facilities such as shelves, lockers, or designated areas so that classrooms remain tidy, movement becomes easier, and students can focus better on learning, as organized classroom spaces improve students' perception of learning quality and support concentration and effective learning.

The indicator "The school has clean restrooms" got the lowest mean of 3.12 with a descriptive equivalent of "Satisfied". This means that restrooms are commonly utilized facilities where hygiene standards are difficult to maintain, leading to significant student dissatisfaction when neglected. This finding is supported by Widiastur et al. (2020), who identified cleanliness as the most dominant factor in learning comfort. Additionally, Sangalang et al. (2022) found that poor restroom maintenance and inadequate hygiene supplies (WASH facilities) in schools are linked to increased student stress and a lower perception of facility quality.

The results imply that schools need to give more attention to maintaining clean and well-supplied restrooms to support students' comfort and well-being. Improving restroom cleanliness, ensuring regular cleaning schedules, and providing enough water, soap, and sanitation supplies can help reduce student stress and improve their overall school experience, as proper hygiene and well-maintained facilities contribute to better comfort, health, and satisfaction in the learning environment.

The indicator "The classroom floor is not slippery" got the second lowest mean of 3.23 with a descriptive equivalent of "Satisfied". This means that learners feel the classroom floor is safe and not slippery most of the time, helping prevent accidents and allowing comfortable movement, although the slightly lower rating suggests there are still occasions when the floor may become wet, dusty, or not properly maintained, affecting their sense of safety and comfort. Sirojiddin (2025) highlights that deliberate design and maintenance decisions, including safety features, are fundamental for an inclusive and effective learning environment. In line with this, recent studies have emphasized the importance of the physical classroom environment especially floor condition and general maintenance in shaping students' perceptions of safety and comfort, which in turn affects their engagement and well-being (Andrade et al., 2025; Cunanan, 2025).

The results imply that schools should strengthen regular cleaning and maintenance of classroom floors to ensure they remain dry, clean, and safe at all times. Improving floor safety can help prevent accidents, increase students' sense of security, and support a more comfortable learning environment, as proper maintenance and safety features are important for creating effective and supportive classroom conditions.

The indicator "The inside of the classroom is quiet when the teacher is teaching" got the third lowest mean of 3.24 with a descriptive equivalent of "Satisfied". This means that noise and minor distractions still occur at times in the classroom, which may affect their concentration and focus during instruction. The study of Mercugliano et al. (2025), explains that poor acoustic conditions and classroom noise can weaken students' attention and memory. These results are consistent with Barri (2020), who identified classroom acoustics as one of the commonly low-rated aspects of the learning environment that may need improvement. This implies that schools should strengthen classroom noise management to create a quieter and more comfortable learning environment. Teachers and school administrators may improve classroom rules, manage student behavior, and minimize outside noise so students can focus better during lessons, since quiet classroom conditions help improve attention, memory, and overall learning comfort.

To conclude, the results highlight that a well-maintained and supportive physical learning environment plays a vital role in shaping learners' comfort, focus, and overall school experience. While learners expressed very high satisfaction with classroom furniture, instructional tools, and storage facilities, the relatively lower ratings in restroom cleanliness, floor safety, and classroom quietness point to areas that still require consistent attention and improvement. These results emphasize that maintaining clean, safe, organized, and distraction-free learning spaces is essential in promoting students' well-being, strengthening their concentration, and enhancing the quality of teaching and learning. Continuous efforts to improve facility conditions and ensure proper maintenance will help create a more supportive, effective, and student-centered learning environment.

Table 1b. Level of Satisfaction of Learners with the Learning Environment in terms of Psychological Dimension

INDICATOR	**WM**	**DE**
I feel that I belong in the classroom.	3.48	VS
I feel safe inside the school.	3.68	VS
I am protected while studying here.	3.55	VS
I am comfortable in my seat.	3.60	VS
My teachers understand my interests.	3.36	VS
I listen attentively to the lessons in class.	3.50	VS
I can focus on the lessons when I am in the classroom.	3.44	VS
My nervousness is reduced when I am at school.	3.31	VS
I am calm while inside this room.	3.35	VS
. The environment has a positive effect on the class.	3.17	S
. I have a good relationship with my classmates.	3.67	VS
. I am comfortable speaking with my teachers.	3.54	VS
. I actively participate in class discussions.	3.54	VS
. I participate in all class activities.	3.48	VS
. I am satisfied with my grades in school.	3.40	VS
. I have learned many new things at school.	3.70	VS
. I feel a sense of peace inside the classroom.	3.35	VS
AWM	**3.477**	**VS**

Legend: VS- Very Satisfied; S- Satisfied

Table 1b shows the level of satisfaction of learners with the school learning environment in terms of psychological dimensions is "Very Satisfied" with an average weighted mean of 3.477. This means that the school has successfully fostered an atmosphere where students feel emotionally secure, socially connected, and academically supported. For instance, Guo et al. (2025) found that teacher emotional support enhances students' academic resilience, self-efficacy, and engagement, demonstrating the positive effects of psychological support

on academic experiences. Similarly, Peng et al. (2024) reported that a positive campus environment improves students' emotional well-being, increasing feelings of happiness, relaxation, and security.

Moreover, Lizarte-Simón et al. (2024) also emphasized that psychological well-being and self-efficacy are key factors in fostering academic engagement, suggesting that students who feel supported are more motivated and actively involved in learning. Moreover, Konstantinidis (2024) highlighted that a positive classroom climate, supportive teaching practices, and adequate learning resources contribute significantly to student well-being and satisfaction. This implies that a psychologically supportive school environment plays a critical role in enhancing students' emotional, social, and academic experiences.

The indicator "I have learned many new things at school" got the highest mean of 3.70 with a descriptive equivalent of "Very Satisfied". This means that students are learning many new things in school because it satisfies the student's innate need for competence and cognitive growth.

This finding aligns with Self-Determination Theory (2012), which posits that the mastery of new knowledge is a fundamental psychological need that fosters intrinsic motivation and overall well-being. Additionally, this high level of satisfaction may reflect a state of "Flow," a concept developed by Csikszentmihalyi (1990), where students become deeply immersed in achievable yet challenging new tasks, leading to a profound sense of fulfillment and enjoyment in the learning process.

To maintain students' interest and engagement, teachers and schools should design learning activities that introduce new ideas, varied tasks, and achievable challenges. Providing opportunities for discovery, active participation, and skill development can help sustain students' motivation and sense of fulfillment, as experiencing novelty and mastering new knowledge strengthens both emotional and cognitive engagement and supports students' psychological needs for competence and growth.

The indicator "I feel safe inside the school" got the second highest mean of 3.68 with a descriptive equivalent of "Very Satisfied". This means that most learners feel protected and secure while they are inside the school, which helps them feel comfortable, reduces fear or worry, and allows them to focus better on their learning and school activities. This supports the study of Tapia-Fonllem et al. (2020) which explains that the social atmosphere of a school is vital for well-being. This is supported by Quansah et al. (2022), whose research highlights that a perceived safe learning environment is crucial for reducing academic anxiety and allowing students to focus on practical-oriented learning tasks.

The results imply that schools should continue to maintain strong safety measures and a supportive school climate to keep students feeling secure and comfortable. Sustaining clear rules, positive relationships, and protective practices within the school can help reduce anxiety, strengthen students' confidence, and support better focus and participation in learning, since a safe and supportive environment promotes well-being and effective learning.

The indicator "I have a good relationship with my classmates" got the third highest mean of 3.67 with a descriptive equivalent of "Very Satisfied". This means that most learners experience positive and supportive relationships with their classmates, which helps them feel accepted, comfortable, and more confident in participating in class, while also promoting cooperation, social support, and a more positive learning environment.

Having good relationships with classmates reflects high satisfaction in "relatedness" of the study of Benlahcene, Kaur and Aang-Hashim (2021) which found that relatedness is positively associated with all types of student engagement. This finding is supported by Wentzel, Jablansky and Scalise, (2021), who found that peer social acceptance is positively associated with students' academic adjustment and engagement in school activities. Learners who experience supportive peer relationships are more likely to participate actively and develop positive learning behaviors.

Similarly, Kilday and Ryan (2025) reported that classroom friendships play an important role in students' behavioral and emotional engagement, showing that supportive peer connections help students stay involved in

learning and seek help when needed. This implies that schools should continue to promote positive peer relationships and cooperative learning activities to strengthen students' sense of belonging and social support. Encouraging group work, respectful communication, and inclusive classroom practices can help maintain strong peer connections, increase student participation, and support deeper engagement in learning, since positive social relationships contribute to students' involvement, motivation, and overall learning experience.

The indicator "The environment has a positive effect on the class" got the lowest mean of 3.17 with a descriptive equivalent of "Satisfied". This means that learners perceive the classroom environment as helpful and supportive, but the lower rating suggests that some aspects of the environment may not always fully encourage participation, motivation, or positive interaction in the class, indicating a need for further improvement to strengthen its overall positive impact on learning.

The study of Cambay and Paglinawan (2024) suggests that without specific classroom management strategies to bridge the gap, the environment alone may not feel actively supportive to every learner. Similarly, Fisher and Frey (2021) highlight that structured classroom interactions, clear expectations, and opportunities for student voice are essential in making the learning environment more impactful and engaging. Furthermore, a study by UNESCO (2022) indicates that inclusive and participatory classroom environments significantly improve learners' motivation, engagement, and sense of belonging, which are critical in enhancing the overall effectiveness of the learning environment.

The results imply that schools and teachers should strengthen classroom practices that make students feel involved, valued, and supported in their learning environment. Encouraging student participation, giving learners opportunities to express their ideas, and applying inclusive and responsive classroom management strategies can help improve how students experience the classroom environment, since feeling involved and supported increases motivation, engagement, and the overall positive effect of the learning environment.

The indicator "My nervousness is reduced when I am at school" got the second lowest mean of 3.31 with a descriptive equivalent of "Very Satisfied". This means that although they are very satisfied some learners may still experience feelings of anxiety or nervousness, showing that emotional support in school can still be further strengthened. As noted by Conesa et al. (2022), meeting general needs is often insufficient; reducing specific psychological stressors like nervousness requires more targeted, individualized support from educators. Furthermore, Quansah et al. (2022) identify that external academic pressures and social expectations often keep anxiety levels present even when the physical and social environment is deemed safe, indicating that emotional well-being requires continuous, proactive intervention.

The results imply that schools should implement more focused emotional support strategies such as strengthening teacher sensitivity to student stress, expanding accessible guidance and counseling services, and integrating classroom-based social-emotional learning activities that build coping and emotional regulation skills.

The indicator "I feel a sense of peace inside the classroom" got the third lowest mean of 3.35 with a descriptive equivalent of "Very Satisfied". This means that although they are very satisfied some students may still occasionally experience tension, stress, or emotional unease during class activities. Mahoney et al. (2021) highlight that emotional regulation and supportive classroom climates are essential in sustaining students' sense of peace and overall well-being. The study of Ntumi (2025) found that integrating social-emotional learning (SEL) practices in classroom settings significantly improves students' psychological well-being, resilience, and academic engagement, while also reducing stress, anxiety, and other negative emotional experiences.

In addition, a meta-analysis by Zhao and Sang (2025) demonstrates that SEL programs contribute to both improved emotional regulation and academic outcomes, reinforcing the importance of addressing students' emotional needs within the learning environment. This implies that while the classroom environment is generally supportive, strengthening emotional support systems can further enhance students' sense of inner calm and psychological comfort. Integrating social-emotional learning (SEL) practices in the classroom significantly improves emotional regulation, reduces stress, and promotes a more peaceful and supportive learning environment.

To conclude, the results reveal that while students thrive in a safe, supportive, and engaging learning environment, strengthening emotional support and classroom responsiveness remains crucial. Nurturing both academic growth and psychological well-being ensures that learners not only succeed, but also feel secure, motivated, and fully empowered in their learning journey.

Table 2. Level of Academic Performance of Pupils based in the DepEd Order 08, s 2015

Range	**DE**	**Number of students (f)**	**Percentage**
90-100	Outstanding	39	26.17
85-89	Very Satisfactory	34	22.82
80-84	Satisfactory	51	34.23
75-79	Fairly Satisfactory	25	16.78
Below 75	Did not meet expectations	0	0
Overall Level of Academic Performance: **85 (Very Satisfactory)**			

Table 2 shows that the academic performance of the 149 pupils is Very Satisfactory with an Overall Level of Academic Performance of 85. This means that the majority of the pupils are able to meet the expected learning standards and demonstrate a solid understanding of the lessons, reflecting consistent academic achievement and effective learning. This finding is supported by the study of García and Weiss (2020), which explains that students who consistently meet learning standards typically benefit from supportive learning environments and effective instructional practices that strengthen academic outcomes and promote sustained academic success. Similarly, Hattie (2023) emphasizes that visible learning practices, clear feedback, and effective teaching strategies significantly contribute to improved student achievement and deeper understanding of lessons.

The results imply that maintaining and enhancing supportive learning environments, coupled with evidence-based instructional strategies, is essential for sustaining high academic performance. Teachers and school administrators should continue to implement clear feedback mechanisms, structured lesson plans, and engaging teaching methods to ensure that students not only meet learning standards but also develop deeper comprehension and long-term mastery of the subject matter.

The largest group of pupils falls under the “Satisfactory” level, with a 51 number of students and have a percentage of 34.28%. This means that many learners meet the basic learning standards and show acceptable understanding of the lessons, but their skills and deeper understanding can still be improved. This is supported by Abarquez et al. (2025) that while pupils reported high satisfaction with teacher, student, and learning environment factors, their academic performance remained only satisfactory. Brandmo and Gamlem, (2025) highlights similar patterns: high-quality, actionable feedback and guided instruction are strong predictors of improved student achievement, motivation, and engagement, even when initial performance levels are only moderate.

In the Philippine context, research on teacher feedback similarly reveals a positive relationship between timely, constructive feedback and students’ academic achievement, indicating that enhancing teacher-student interactions around performance could support higher achievement levels (Ignacio et al., 2024). This implies that teachers may provide more guided practice, clear feedback, and step-by-step learning support to help pupils deepen their understanding and move toward higher performance. Strengthening instructional guidance and addressing other possible learning factors can better support academic improvement and help more learners progress beyond the satisfactory level.

The second-highest group consists of 39 students in the range of 90-100 with a descriptive equivalent of "Outstanding" and have a percentage of 26.17%. This means that the presence of students in this top tier suggests that over a quarter of the class has mastered the content thoroughly. This high-tier achievement is supported by Baafi (2020), who established that students in schools with pleasant physical environments and adequate facilities, such as well-furnished classrooms and libraries, demonstrate significantly better academic outcomes.

Additional research confirms that the quality of learning environments and availability of supportive facilities are positively associated with student academic performance. For example, Romero (2026) found that flexible and well-designed learning spaces significantly improve students' performance by enhancing engagement and instructional interaction. Similarly, studies have shown that both learning environment and school facilities exert a positive influence on academic achievement, with adequate infrastructure contributing to better learning outcomes and student success (Sugandhi & Retnawati, 2025; Idris 2025).

The results imply that schools may continue maintaining and improving supportive learning conditions and adequate facilities to sustain high academic performance. Providing enriched learning materials, advanced activities, and continuous academic support can help these high-performing students maintain excellence and encourage other learners to strive for higher achievement, as conducive learning environments and adequate resources help strengthen and sustain academic success.

The third-highest group consists of 34 pupils in the range of 85-89 with a descriptive equivalent of "Very Satisfactory" and have a percentage of 22.82%. This means that these pupils consistently meet and often exceed the expected learning standards, showing a strong understanding of the lessons and the ability to apply what they have learned in most academic tasks. This is supported by Mallillin (2025) that well-designed classroom environments improve student engagement, participation, and concept mastery, which guide learners toward stronger academic achievement. Supportive and well-structured classroom environments are significantly associated with increased student motivation, academic engagement, and overall performance, suggesting that such environments help learners better understand and retain content (Valdenaro, 2026; Loyong et al., 2026).

The results imply that schools may continue strengthening classroom conditions and learning environments to help these pupils maintain and further improve their performance. Providing supportive facilities and engaging classroom design can enhance participation, deepen understanding, and help more learners progress toward outstanding achievement, as conducive environments and strong engagement contribute to sustained academic success and improved student outcomes.

The lowest group consist of 25 students in the range of 75-79 with a descriptive equivalent of "Fairly Satisfactory" and have a percentage of 16.78%. This means that the class is struggling to master the core competencies and may be at risk of falling further behind without immediate intervention. According to Hattie (2023), students in the lower achievement quartiles often require more frequent and specific feedback than their higher-achieving peers to bridge the gap between their current status and the learning goals. Furthermore, Slavin, Madden and Ross (2025) emphasize that students in this range are highly susceptible to a "learned helplessness" cycle, where repeated academic struggle leads to a decrease in motivation and effort.

The results imply that teachers and schools may provide immediate and targeted academic support for these pupils through remedial instruction, step-by-step guidance, and frequent, clear feedback to help them improve their understanding of basic competencies. Strengthening encouragement, monitoring progress closely, and using supportive teaching strategies can help prevent loss of motivation and support gradual academic improvement, as consistent feedback helps learners close learning gaps while structured academic support can reduce the risk of discouragement and improve effort and achievement among struggling students.

No pupils fell below the expected level, showing that all learners reached at least the minimum academic standard. This means that teaching strategies and learning support are generally effective in helping pupils meet required learning goals. This finding aligned by the Mastery Learning Model proposed by Bloom (1968), which asserts that nearly all students can reach a high level of academic achievement if the instruction is systematic and students are provided with the appropriate time and support to learn.

The results imply that the school should continue applying effective teaching strategies, aligned instruction, and consistent learning support to sustain this positive outcome. Maintaining systematic instruction, timely feedback, and appropriate learning time can help ensure that all pupils continue to meet the required standards and gradually move toward higher levels of achievement, as providing sufficient time and support helps most learners succeed while strong instructional alignment improves learning effectiveness and student progress.

The results clearly show that while most pupils are performing well and meeting the expected learning standards, continuous support, effective teaching, and a strong learning environment remain essential to sustain and further improve academic success. Strengthening instructional practices, providing timely feedback, and ensuring supportive learning conditions can help high-performing pupils maintain excellence, guide average learners toward higher achievement, and assist struggling pupils in closing learning gaps. Through consistent and well-aligned educational efforts, the school can continue to promote equitable learning, steady academic growth, and improved overall student performance.

Table **3.** Significant Relationship Between the Level of Academic Performance and the Level of Satisfaction of Learners with the Learning Environment

	Mean	DE	P-value	Interpretation
Academic Performance	85	Very Satisfactory	0.082	**Not Significant**
Level of Satisfaction	3.48	Very Satisfied		

Table 3 shows that the relationship between the level of academic performance and level of satisfaction of learners with their learning environment is “Not Significant” with a p-value of 0.082. These results contradict the null hypothesis, which stated that there is no significant relationship between the level of academic performance and level of satisfaction of learners with their learning environment. This means that although students are performing well academically and are happy with their environment, the two factors do not have a statistically significant correlation. In other words, a high level of satisfaction does not automatically guarantee or drive high academic grades in this specific group.

The results of Gaisiey et al. (2025) showed that physical settings, social settings, and psychological settings did not significantly predict student performance. This suggests that while the learning environment contributes to students’ comfort and overall learning experience, it may not be a direct or primary determinant of academic grades. This finding supports the present study, indicating that academic performance is likely influenced by multiple factors beyond the learning environment alone, such as instructional quality, learner motivation, and individual differences. This is further supported by Abuhassna et al. (2020), whose research indicated that while well-designed learning spaces significantly improve the learning experience and student engagement, they do not show a linear correlation with immediate academic achievement or GPA. Similarly, Nunez et al. (2025) found no significant relationship between the extent of classroom environment implementation including seating arrangement, lighting, and acoustics and learners' academic achievement in San Fernando I District, despite satisfactory performance levels.

Other recent studies, however, present contrasting results. For example, Acoba and Ariola (2025) college students identified that certain aspects of the classroom learning environment significantly predicted students’ academic performance in mathematics, suggesting that environmental factors may have subject-specific or contextual effects. Likewise, Akinyemi et al. (2024) reported that classroom environment components played a significant role in influencing junior secondary students’ academic performance, emphasizing the importance of structured and supportive learning spaces. Furthermore, a study of Kirkil (2025) demonstrated that classroom temperature and humidity conditions affect students’ concentration and learning performance, although the magnitude of their impact varies depending on contextual and instructional factors.

The results imply that institutional efforts to improve the physical or social feel of the learning environment may increase student happiness but might not be the most effective level for raising academic scores. It is concluded that academic performance is independent of environmental satisfaction in this context, suggesting that achievement is likely driven by internal variables like student resilience or external variables like pedagogical quality.

Furthermore, school administrators should prioritize improving the learning environment through better lecture room configurations and sufficient resources to maintain high satisfaction. In contrast, to specifically target academic performance, institutions should focus on cultivating positive student-teacher connections, enhancing teacher training, and fostering student engagement, as these are identified as critical factors that transcend the mere physical setting.

To conclude, the results affirm that while learners are both academically capable and satisfied with their learning environment, satisfaction alone does not drive academic success. Academic performance emerges as a multifaceted outcome shaped more by instructional quality, learner motivation, and meaningful engagement than by environmental comfort alone. Therefore, sustained academic improvement depends on a balanced and holistic approach that strengthens teaching effectiveness, nurtures student motivation, and maintains supportive learning conditions to address the complex nature of achievement.

Table 4. Significant Difference in the Level of Satisfaction of Learners Between the Two Dimensions of the Learning Environment

Dimension	Mean	DE	P-value	Interpretation
a. Physical	3.478	VS	0.274	**Not significant**
b. Psychological	3.477	VS		

Legend: VS- Very Satisfied

Table 5 shows a p-value of 0.274 with an interpretation of “Not Significant”. The results contradict the null hypothesis, which stated that there is no significant difference in the level of satisfaction of learners between the two dimensions of the learning environment, between the level of academic performance and level of satisfaction of learners with their learning environment. This means that students are both very satisfied with their physical and psychological dimensions of their learning environment. This implies that the school has successfully created a well-balanced learning atmosphere. By satisfying both the physical and psychological dimensions, the institution has provided students with high-quality facilities and a supportive, stress-free social climate.

The study of McKeown (2025) has nearly identical scores with a difference of only 0.001 align with the "Eduscape" model discussed in recent environmental psychology, which posits that a well-managed physical setting serves as a necessary scaffold for a stable psychological experience. Additionally, Erdem and Kaya (2023) found that environmental satisfaction often functions as a "baseline" factor, meaning that while it is necessary for a healthy learning experience, it remains independent of the cognitive variables that determine a student’s specific grade point average.

Similarly, research on student satisfaction with university facilities and services revealed that satisfaction with teaching methods, classroom environment, and support services contributes to higher overall student satisfaction, which in turn can influence academic engagement even if not directly tied to grade outcomes (Bolatimi, 2025). Additionally, studies in basic education contexts show that both physical features (e.g., lighting, ventilation) and psychological aspects (e.g., classroom climate, engagement) correlate with how students perceive their learning environments and express satisfaction with their schooling experience (Selda et al., 2025). Beyond academic achievement, research also highlights that student satisfaction with the environment can play a meaningful role in motivational outcomes and well-being (Ibrahim et al., 2023).

It is recommended that the administration continue to treat facility maintenance and student support services as interdependent priorities. As suggested by Tobia et al. (2022), future improvements should focus on flexible learning spaces that allow students to modify their physical surroundings, which has been shown to further boost both physical comfort and the psychological sense of autonomy. By maintaining this parity, the institution ensures that the learning environment remains a supportive and distraction-free foundation for academic success.

Table 5a. **The** Physical Learning Dimension Significantly Predict Students' Academic Performance

	Standardized Coefficients Beta	p-value
The classroom has enough comfortable chairs with desks.	-.055	.549
The classroom has a functional blackboard.	.213	.033*
The classroom has a functional whiteboard.	-.276	.002*
The classroom has sufficient lighting.	.204	.030*
The desks and chairs are properly arranged.	-.061	.562
The classroom has proper airflow.	-.031	.754
The classroom has enough space for activities.	.018	.857
The furniture is arranged in the proper place.	-.074	.434
The classroom decorations are well arranged.	-.006	.958
The classroom has the right number of students.	-.136	.156
The area outside the classroom is quiet during class.	.008	.938
The inside of the classroom is quiet when the teacher is teaching.	-.158	.151
The classroom floor is not slippery.	.056	.581
The classroom has easy access to learning areas.	.010	.921
The classroom has proper storage for personal belongings.	-.087	.376
The classroom has clean drinking water.	.108	.264
The school has clean restrooms.	.005	.963
The classroom is well-ventilated.	.199	.043*

***Predictor**

Table 5a shows that the physical learning dimensions reveal a detailed relationship with academic performance, where only a selective few factors serve as significant predictors. Out of the 18 indicators analyzed, there are only 4 predictors of physical learning dimension. This means that although the learning environment is composed of many elements, only a limited number have a meaningful influence on students' academic performance.

The results aligned with prior research show that not all components of the learning environment equally influence academic achievement. While teachers and students generally perceive the environment as beneficial,

only certain factors such as teacher–student relationships, instructional delivery systems, and academic support directly predict performance (Tareen and Kiazi, 2020; Jiang, 2021). Similarly, a conducive learning environment must be combined with high student motivation to meaningfully impact achievement, as many environmental dimensions remain statistically insignificant when examined in isolation (Werang et al., 2025; Huang, 2023).

Recent empirical studies further support these results. For example, the quality of teacher support and classroom relational environments has been found to strongly influence academic engagement and achievement, sometimes more than physical facilities or infrastructure alone (Jiang, 2021; Aneke, 2022). In addition, while school resources and infrastructure contribute to improved learning conditions, engagement, self-efficacy, and instructional quality exert more direct effects on student performance (Mohamad, 2024; Garcia, 2025).

The results imply that school administrators and educators should prioritize strengthening the most impactful dimensions of the learning environment such as teacher student relationships, instructional strategies, and academic support over less influential elements.

The indicator “The classroom has a functional whiteboard” got a p-value of 0.002 and have the strong positive Beta of -0.276 which means that it is a predictor of academic performance. This means that the availability of functional visual aids is not merely a matter of convenience but an important factor in the instructional process that directly influences student learning outcomes. This is supported by the study of Rafiq et al. (2022), who highlight that classroom infrastructure, specifically visual tools, play an important role in enhancing students' cognitive engagement and retention of information. Furthermore, the study of Hattie (2023) concept of "visible learning," where tools that make the learning process transparent and structured for the student significantly boost mastery of the subject matter.

The results imply that schools should prioritize the provision and maintenance of essential instructional tools, such as functional whiteboards, as part of their strategy to improve academic performance. Ensuring that teachers have access to clear and effective visual aids can strengthen lesson delivery, enhance student understanding, and promote active classroom engagement. Schools are encouraged to allocate resources for the regular maintenance and upgrading of basic classroom facilities, particularly visual instructional tools, to support effective teaching and learning. Strengthening classroom infrastructure alongside effective pedagogy may significantly enhance students’ academic achievement.

The indicator “The classroom has sufficient lighting” got a p-value of 0.030 and a strong positive Beta of 0.204 which means that it is a predictor of academic performance. This means that enough classroom lighting helps improve students’ academic performance because good lighting makes it easier for them to see clearly, read properly, and stay focused during lessons. This directly supports the review by Brink et al. (2021) identifying lighting as one of the four essential indoor environmental parameters that influence the quality of teaching and learning. A systematic review of lighting conditions in learning spaces found that optimal light intensity and appropriate color temperature improve attention and memory, both of which are critical for academic performance (Chauca et al., 2024). Similarly, a study examining the direct influence of classroom lighting on students’ learning abilities demonstrated that higher-quality lighting conditions significantly enhanced academic achievement in classroom settings (Bajwa & Dogar, 2024).

Experimental evidence also shows that brighter lighting levels increase task concentration and cognitive performance, indicating that sufficient lighting is a key environmental factor for effective learning (Pradhan et al., 2024).

The implication of this finding is that schools should ensure classrooms are well-lit through proper use of both natural and artificial lighting to support effective learning. Maintaining adequate lighting conditions can help improve students’ concentration, reduce eye strain, and promote better academic performance. Therefore, school administrators are encouraged to regularly monitor classroom lighting, repair faulty fixtures, and design classrooms that maximize natural light, as a well-lit environment contributes to better learning conditions and improved student outcomes.

The indicator "The classroom has a functional blackboard" got a p-value of 0.033 and a strong positive Beta of 0.213 which means that it is a predictor of academic performance. This means that a working blackboard helps teachers explain lessons more clearly and allows students to follow, copy notes, and understand the discussion better. When information is presented clearly, students can focus more and learn more effectively, which can help improve their academic performance. This finding is supported by Panulaya (2024), who identified that school-related factors such as adequate learning infrastructure significantly influence students' academic outcomes, emphasizing that proper classroom resources help improve learning and performance.

Furthermore, while digital transformation is expanding, the fundamental need for stable, functional instructional resources remains. Inadequate infrastructure is still cited as a primary barrier to effective knowledge flow and interaction within schools (Grankina et al., 2025). When teachers have access to reliable visual aids like a functional blackboard, they can create more interactive, student-centered environments that foster deeper cognitive engagement (Kumar et al., 2022; Bouchrika, 2025).

The results imply that schools should ensure that every classroom is equipped with a clean, visible, and well-maintained blackboard to support clear and effective teaching. Collaborative efforts among teachers and school leaders in improving instructional practices and learning resources can further enhance student achievement, as adequate infrastructure and effective teaching jointly support better academic outcomes.

The indicator "The classroom is well-ventilated" got a p-value of 0.043 and a strong positive Beta of 0.199 which means that it is a predictor of academic performance. This means that good ventilation helps students stay comfortable, breathe fresh air, and avoid feeling too hot or tired during class, allowing them to concentrate better and participate more actively in learning activities. When students feel physically comfortable, they are more alert and able to focus, which can help improve their academic performance. This result is supported by Wargocki (2020), who explained that proper classroom ventilation improves students' concentration, reduces fatigue, and enhances learning efficiency.

The results imply that schools should prioritize maintaining proper classroom ventilation by ensuring windows, fans, and other airflow systems are functional and regularly monitored. Providing a well-ventilated learning space can help keep students alert, comfortable, and ready to learn, which may support better academic performance.

Beyond the predictors mentioned, an interview reveals that the auditory environment significantly impacts pupils' academic performance and cognitive clarity. While a whiteboard or good lighting provides the tools for learning and classroom noise can negate these environmental advantages. The following verbatim responses illustrate how noise distractions lead to a loss of focus, frustration, and a decreased mood for learning:

Maapektaran ta jay kangiwat da, tano adda araramidek nga equation wenno work tas nu agngingiwat da mapukaw jay concentration ko jay work ko so malipatak jay araramidek.

(It affects my grades because I forget what I'm working on an equation when they are noisy.) **P1**

Dagijay ubbing Ma'am nga nangiwat nu recess...ket sudan ton kitkitak dagijay ubbing.

(The children are noisy during their recess…I shift my attention to them.) **P2**

Minsan ma'am dagidjay classmate ko ma'am nu ag-angalaw-da nu ag-inistorya-da ma'am… madistract ak.

(Sometimes when my classmate is noisy when they are chatting… I lost my focus.) **P3**

Madistrack nak jay kaabay ko lang Ma'am.. Agkop kopya ma'am.

(I lose my focus while answering… because my seatmate is copying my paper.) **P4**

Nu nangiwat da Ma'am… Maawan ti focus ko Ma'am

(I lose concentration because of the noise.) **P18**

Mga pasaway na kaklase… Agpukkapukaw, lumanagto, magna-magna. Maawawan ti mood nga agdenggeg. (I lose my mood to listen when my classmate is being naughty, they are shouting, jumping and walking.) **P23**

Ma'am haan nak makareview kasi nalaaw da.

(I can't review my lesson because they are too loud.) **P24**

Jay agaapa Ma'am… Mapan idjay ti atensyon kon Ma'am.

(My attention goes towards to my classmate quarreling.) **P27**

Awan ton naawatak jay ibagbaga ni sir ta isudan ton mamanggeg.

(I don 't understands what my teacher is saying because I can only hear my classmate talking.) **P28**

In the verbatims, the students reported that noise from classmates during class, recess, or group activities significantly affects their concentration and learning. They have trouble focusing on their work, understanding lessons, and reviewing material because of disturbances such as talking, moving around, or copying from others. The distractions lead not only to a loss of focus but also negatively impact their mood and overall engagement in class activities. In essence, the students perceive that a noisy environment hinders their academic performance and the quality of their learning experience.

The results aligned with the study of Fretes and Palau (2025) confirming that classroom noise has a significant negative impact on students' cognitive and academic performance, specifically affecting memory, attention, and reading comprehension. Their study emphasizes that children aged 6 to 12 are particularly vulnerable to these disruptions due to their still-developing cognitive filtering mechanisms. Similarly, Oweisana (2025) explains that chronic exposure to noise triggers a physiological stress response that dysregulates the prefrontal cortex the brain's center for executive function leading to difficulties in staying on task and completing assignments.

The results are strongly supported by recent empirical research regarding environmental stressors in educational settings. Renaud et al. (2024) highlight that students experience acute bodily reactions to classroom noise, which manifest as physical discomfort that interferes with their ability to "think and work." Their research confirms that such environmental stressors not only distract students but also impair overall cognitive performance.

Furthermore, Mercugliano et al. (2025) highlights that social noise, such as multitalker babble or peer talking, is more cognitively taxing than steady background noise because the human brain is evolutionarily predisposed to prioritize social information, directly supporting the participants' reports of losing focus when classmates are being naughty or talking.

To conclude, the results clearly show that not all elements of the learning environment equally influence academic success. Thus, meaningful improvement in academic performance lies not in changing everything, but in strengthening what matters most. When schools deliberately invest in essential learning resources and combine them with effective teaching practices, they create powerful conditions for deeper learning, sustained achievement, and long-term academic success.

Table 5b. The Psychological Learning Dimensions Significantly Predict Students' Academic Performance

	Standardized Coefficients Beta	p-value
I feel that I belong in the classroom.	0.157	0.138
I feel safe inside the school.	0.069	0.517

I am protected while studying here.	-0.087	0.458
I am comfortable in my seat.	0.013	0.903
My teachers understand my interests.	-0.055	0.609
I listen attentively to the lessons in class.	0.018	0.859
I can focus on the lessons when I am in th e classroom.	-0.144	0.145
My nervousness is reduced when I am at school.	-0.088	0.366
I am calm while inside this room.	0.040	0.725
The environment has a positive effect on the class.	0.078	0.430
I have a good relationship with my classmates.	-0.067	0.443
I am comfortable speaking with my teachers.	-0.024	0.817
I actively participate in class discussions.	0.036	0.740
I participate in all class activities.	0.074	0.508
I am satisfied with my grades in school.	0.073	0.491
I have learned many new things at school.	0.208	0.058
I feel a sense of peace inside the classroom.	-0.067	0.494

Table 5b indicates that the psychological dimensions of the learning environment is not a predictor of students' academic performance although psychological aspects of the learning environment such as sense of belonging, comfort, calmness, and relationships are important for students' emotional well-being and overall school experience, they do not show a direct or statistically significant influence on academic performance in this study. In other words, feeling comfortable, safe, or emotionally supported in school does not automatically translate into higher academic achievement.

The result is supported by Gaisiey et al. (2025), who reported that psychological, social, and physical learning environment factors did not significantly predict student performance. Similarly, Abarquez et al. (2025) found that even when pupils reported high satisfaction with teacher, student, and learning environment factors, their academic performance are not significantly affected. These studies suggest that while psychological comfort supports a positive learning atmosphere, academic achievement is more directly shaped by factors such as instructional quality, learner motivation, and effective teaching strategies.

On the other hand, Kassab et al. (2024) using the DREEM framework showed that emotional engagement tied to psychological perceptions did not significantly predict GPA, unlike cognitive and behavioral factors. This connects with the study of Edgerton and McKechnie (2023) it analyzed students' perceptions of school environments and found that while positive psychological factors like safety and engagement mediated some behavioral outcomes, they did not directly correlate with academic achievement scores, emphasizing instead the role of in-school behaviors.

The verbatim responses from the interviews revealed that there are still variables that affect the academic performance of students.

Adda lang ma'am dagidjay nu-ngay adda ti agpin-pinnasa ket matamaan ak Ma'am.

(My classmate starts throwing papers and I get hit) **P3**

Adda ti time nga agtutulonog nak tas suron suronen dak ti aso, pati ni nanang ko kn tatang ko ket paglulukwan da, sunto paglulukwan dak, suronsurunen dak.

(There was a time when I was sleeping, then they kept teasing me that I'm a dog; they even made fun of my mother and father. They were mocking me and teasing me.) **P23**

Bullying, nu maminsan. Ket agbuteng nak ton Ma'am

(I end up feeling afraid when they bully me.) **P26**

Nu mairamraman nak ti apa da Ma'am. Nu mairamraman nak ti apa da Ma'am.

(When they are fighting… I get dragged into their fight when I try to stop them.) **27**

When I'm answering my classmate come over, they disturbed me even if you ask them to be quiet. **P30**

The students reported that disturbances in the classroom go beyond noise and distractions; they also experience bullying, teasing, and even physical harm from classmates. Incidents include being hit by thrown objects, being mocked verbally (sometimes involving family members), being dragged into fights, and persistent interruptions while trying to focus on schoolwork. These behaviors lead to fear, anxiety, and a diminished sense of safety, further compromising their concentration, mood, and overall ability to learn effectively.

The results are supported by existing research. Studies show that peer victimization is a serious stressor linked to mental health problems and poorer academic performance among students (Menken et al., 2022). Research also found that bullying is associated with difficulties in learning behaviors such as poor time management and weak self-regulation, which directly affect students' ability to focus and perform academically (Solas et al., 2025). These studies confirm that peer conflict and bullying create emotional distress and distraction that can hinder students' academic engagement and school adjustment.

The results imply that schools should continue fostering a supportive and emotionally safe learning environment for student well-being, but improvement efforts aimed at raising academic performance should focus more on strengthening instructional quality, enhancing student motivation, and promoting active engagement in learning. A balanced approach that combines emotional support with effective teaching practices may better address both students' well-being and academic success, as academic achievement is influenced by multiple interacting factors rather than psychological comfort alone.

This study is anchored to Urie Bronfenbrenner's Ecological Systems Theory, these results highlight how the microsystem, the immediate environment of the classroom can either nurture or hold back development. When Noise occurs, the physical microsystem becomes dysfunctional, disrupting the proximal processes necessary for learning. This connects by the Self-Determination Theory of Deci and Ryan, which posits that students require competence, autonomy, and relatedness to remain motivated. Currently, the noise is blocking these needs specifically, bullying undermines relatedness, while noise strip students of their sense of competence and control over their grades.

Figure 2 shows a policy brief, designed to present key research results and recommendations to help decision makers understand an issue and take appropriate action. A policy brief is a vital output for this research because it turns the results into real-world action. While this study identifies problems like students struggling with noise and peer conflict, a research paper alone doesn't always lead to change. By putting this data into a policy brief, it moves from just reporting a problem to offering a solution that school leaders and administrators can use. Ultimately, the policy brief acts as a bridge, ensuring data reaches the people with the power to fix the classroom environment and help students focus.

The policy brief is organized to clearly present the issue, evidence, and recommended actions regarding the learning environment. The title and header establish the central focus of the document and immediately communicate the main topic to readers.

Figure 2: Policy Brief of Learning Environment (Front Part)

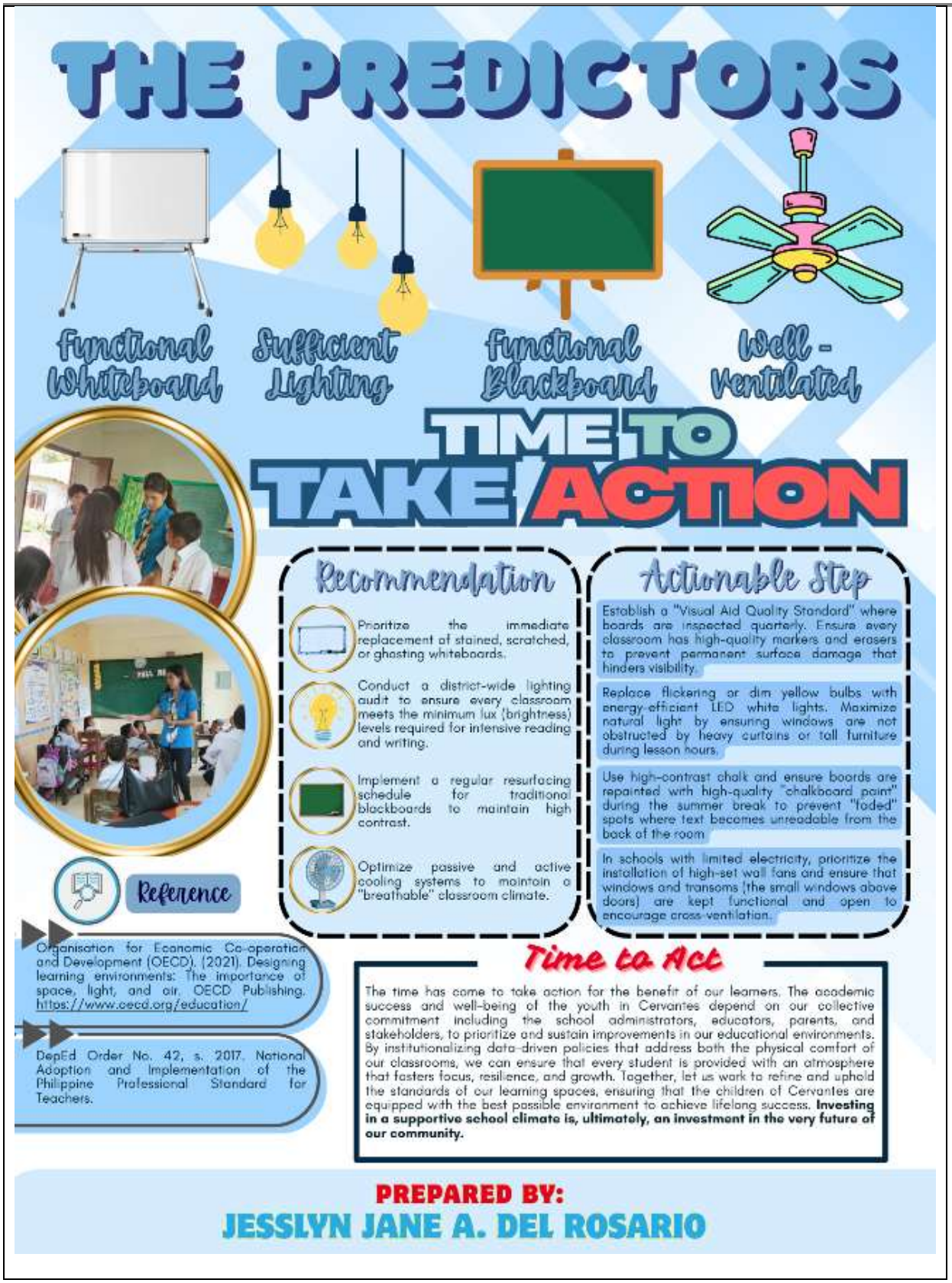

Figure 3: Policy Brief of Learning Environment (Back Part)

The executive summary provides a brief overview of the entire paper, allowing decision-makers to quickly understand the importance of the issue, the research gap, and the general direction of the study. This section functions as a quick guide that prepares readers for the detailed discussion that follows.

Why learning environment is crucial for elementary students, this section provides the conceptual justification of the study. Its purpose is to explain the importance of the topic from an educational and developmental

perspective. It strengthens the argument by linking the issue to broader goals, frameworks, and institutional priorities.

On the right side, a 3D pie chart provides a quantitative snapshot of the "Level of Academic Performance of Pupils." This serves as the primary evidence block, using color-coded segments to allow readers to instantly compare different performance brackets. The concluding statement at the bottom serves as a final takeaway. It ties the data and research together into one clear message.

Figure 3 in the top header uses large, illustrated icons (whiteboard, lighting, blackboard, and fan) to represent the specific physical factors being studied. This creates an immediate visual checklist for the reader, identifying exactly which "predictors" of learning success the document is addressing.

A high-contrast banner reading "TIME TO TAKE ACTION" acts as a visual divider. This separates the general observations from the practical solutions, signaling to the reader that the following sections are intended for policy makers and school administrators.

In the left side is the recommendation and actionable steps, in these readers can expect practical suggestions based on the study. It outlines proposed actions, improvements, or strategies that may be applied by readers or stakeholders in response to the results of the research.

Also, the conclusion, it is calling the school head and school administration to act for better learning environments. The bottom of the document includes a Reference section, and the footer establishes the author's accountability and provides a point of contact for the research.

The policy brief is carefully structured to guide readers from understanding the background of the issue to recognizing the key results and, ultimately, to considering appropriate actions. The policy brief serves a clear purpose beginning with context, moving through the research process and results, and ending with conclusions and actionable recommendations allowing decision makers to quickly grasp essential information.

CONCLUSIONS

Based on the results of the study, the following conclusions are drawn:

1. The Grade 6 students in Cervantes District experience a learning environment that supports their comfort, emotional well-being, and overall learning experience.

2. Most of the Grade 6 students in Cervantes District meet the expected academic standards.

3. A high level of satisfaction does not guarantee or drive a high academic grade.

4. The Grade 6 students in Cervantes District are very satisfied with their learning environment.

5. Functional whiteboard, sufficient lighting, functional blackboard and well-ventilated are predictors of academic performance while, the psychological dimensions is not a predictor of academic performance, this means that not all elements of the learning environment influence academic success.

6. A policy brief was carefully developed to serve as a bridge between research data and real-world action for school leader.

RECOMMENDATIONS

Based on the conclusions drawn, the researcher suggests the following:

1. Schools of Cervantes District may continue to sustain and regularly maintain both the physical and psychological learning environment by consistently improving cleanliness, safety, facilities, and classroom conditions while promoting emotional safety, positive relationships and student engagement.

2. Teachers of Cervantes District may continue to maintain, improve, and strengthen effective teaching, supportive learning environments, and academic support to help high-performing students stay excellent, guide average learners to improve, and support struggling pupils in catching up for continuous progress.

3. Teachers, parents, and learners themselves may work together to improve study habits, strengthen motivation, give consistent guidance and feedback, and encourage active participation in learning, since academic success depends on combined support beyond the school environment alone.

4. Seminar may be held for Teachers and School Administrator, on how to continue improving both the physical and psychological learning environment.

5. School Administrators, teachers, and stakeholders continue improving both physical facilities and student support systems while also strengthening teaching quality, motivation, and engagement.

6. School Leaders and Stakeholders may use this brief as a guide to understand the issue and make better decisions for schools' improvement after validation.

REFERENCES

1. Abarquez Jr., J. P., Alcala, J. C., Ayam, M. C., Baculao, J. A. N. S., Baguio, V. S., & Tagaylo, C. (2025). Satisfaction and academic performance of multigrade pupils. Asian Research Journal of Arts & Social Sciences, 23(4), 180–198. https://doi.org/10.9734/arjass/2025/v23i4671
2. Abuhassna, H., Al-Rahmi, W. M., Yahya, N., Zakaria, M. A. Z. M., Kosnin, A. B. M., & Darwish, M. (2020). Development of a new model on utilizing online learning platforms to improve students' academic achievements and satisfaction. International Journal of Educational Technology in Higher Education, 17(1), 38.
3. Acoba, R., & Ariola, M. F. Q. (2025). Predictive Role of Classroom Learning Environment on the Academic Performance of Students in Mathematics in the Modern World in Isabela State University-Echague. Isabela State University Linker: Journal of Education, Social Sciences and Allied Health, 2(1), 1-1.
4. Akinyemi, I. A., Gbesoevi, E. S., & Afolabi, S. A. (2024). Exploring classroom environment as a predominant factor affecting students' academic performance in Lagos State Junior Secondary Schools, Nigeria. Journal of Education and Learning Research, 1(2), 70-81.
5. Ahmad, N., Ismail, A. R., Mohamad, D., Sonie Palate, N. S., & Kamaruzzaman, A. F. (2024). Improving classroom chairs for student comfort and health: An ergonomic approach. Journal of Human Centered Technology, 3(1), 22–28. https://doi.org/10.11113/humentech.v3n1.65
6. Al-Rousan, A. H., Ayasrah, M. N., & Khasawneh, M. A. S. (2023). Psychological stability and its relationship to academic performance among secondary school students. Journal of Information Sciences Letters, 12(3), 1469-1478.
7. Alvarez, Noelia. (2024). The Physical Learning Environment: examining classroom design. Learning Environments Research. Research Gate
8. Anaman, P. D., Zottor, D. M., & Egyir, J. K. (2022). Infrastructural challenges and student academic performance: Evidence from a developing nation. International Journal of Innovative Science and Research Technology, 7(11), 1189-1200.
9. Andrade, A., D'Oliveira, A., Branco, J. H. L., Russi, A., Stabile, L., & Buonanno, G. (2025). Assessment of Indoor Classroom Environment Quality Associated with Student Sleepiness: Pathways Towards a Sustainable Environment Through a Pilot Study. Sustainability, 17(2), 506.
10. Aneke, J. (2022). Influence of learning environment on the academic performance of secondary school students in Makurdi Metropolis. ScienceOpen Preprints.
11. Baafi, R. K. A. (2020). School Physical Environment and Student Academic Performance. Advances in Physical Education, 10, 121-137. https://doi.org/10.4236/ape.2020.102012
12. Baber, H. (2020). Determinants of students' perceived learning outcome and satisfaction in online learning during the pandemic of COVID-19. Journal of Education and e-learning Research, 7(3), 285-292.

13. Bajwa, M. J., & Dogar, S. R. (2024). Examining the Direct Influence of Classroom Lighting Quality on Students' Learning Abilities and Academic Achievement. Pakistan Languages and Humanities Review, 8(4), 197-210.
14. Barri, M. A. (2020). Evaluation of physical aspects of classroom environment in terms of the humanistic approach: A comprehensive theoretical framework. Journal of Education and Training Studies, 8(11), 1-21.
15. Benlahcene, A., Kaur, A., & Awang-Hashim, R. (2021). Basic psychological needs satisfaction and student engagement: the importance of novelty satisfaction. Journal of Applied Research in Higher Education, 13(5), 1290-1304.
16. Bloom, B. S. (1968). Learning for Mastery. Evaluation Comment, 1, 1–12.
17. Bolatimi, O. S., & Bolatimi, F. E. (2025). Student satisfaction with university facilities and services and its impact on academic performance at Koforidua Technical University, Ghana. Discover Education. Available from https://link.springer.com/article/10.1007/s44217-025-00913-9
18. Bouchrika, I. (2026). Classroom management plan guide in 2026 with examples.
19. Brandmo, C., & Gamlem, S. M. (2025, May). Students' perceptions and outcome of teacher feedback: a systematic review. In Frontiers in education (Vol. 10, p. 1572950). Frontiers Media SA.
20. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77- 101.
21. Brink, H. W., Loomans, M. G., Mobach, M. P., & Kort, H. S. (2021). Classrooms' indoor environmental conditions affecting the academic achievement of students and teachers in higher education: A systematic literature review. Indoor air, 31(2), 405-425.
22. Canales, A., & Webb, A. (2024). The how's and how often's of school harassment: How do they influence the academic achievement of adolescents over time?. Studies in Educational Evaluation, 82, 101358.
23. Cambay, D. J. D., & Paglinawan, D. J. L. (2024). Classroom management strategies and school environment on student engagement. International Journal of Research and Innovation in Social Science, 8(12), 1-13.
24. Chauca, M., Mendoza, E., Moyano, O., Piedra, L., Vega, M., & Sánchez, A. (2024). Improvement of student performance based on the lighting conditions of learning spaces: A systematic review analysis. Journal of Infrastructure, Policy and Development, 8(16), 10619.
25. Chen, H. F., & Tsai, C. Y. (2024). The Impact of School Classroom Chair Depth and Height on Learning Tasks. Education Sciences, 14(6), 661.https://doi.org/10.3390/educsci14060661
26. Conesa, P. J., Onandia-Hinchado, I., Dunabeitia, J. A., & Moreno, M. Á. (2022). Basic psychological needs in the classroom: A literature review in elementary and middle school students. Learning and Motivation, 79, 101819.
27. Costa, A. P., & Steffgen, G. (2020). After the move to a new campus—effects on students' satisfaction with the physical and learning environment. Education Sciences, 10(12), 370.
28. Cunanan, S. G., Calma, M. A. M., Fesarillo, B. A. R., Labao, M. D. V., Pabalan, C. J. G., & Coronado, C. P. (2025). Physical Learning Environment and Its Effect to Learners' Classroom Engagement in Cabiao, Nueva Ecija. International Journal on Management Education and Emerging Technology (IJMEET), 3(4), 25-30.
29. Csikszentmihalyi, M., & Csikzentmihaly, M. (1990). Flow: The psychology of optimal experience (Vol. 1990, p. 1). New York: Harper & Row.
30. Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. Psychological inquiry, 11(4), 227-268.
31. Department of Education. (2021). Basic education report 2021. Republic of the Philippines.
32. Department of Education. (2022). Philippine education sector assessment. Republic of the Philippines.
33. Department of Education. (2023). Enhanced Basic Education Facilities Program. Republic of the Philippines.
34. DepEd Order No. 42, s. 2017. National Adoption and Implementation of the Philippine Professional Standard for Teachers. https://www.deped.gov.ph/2017-national-adaption-and -implementation-of-the-philippine-prefessional-standards-for-teachers/
35. Fisher, D., & Frey, N. (2021). Better learning through structured teaching: A framework for the gradual release of responsibility. ASCD.

36. Edgerton E and McKechnie J (2023) The relationship between student's perceptions of their school environment and academic achievement. Front. Psychol. 13:959259. doi: 10.3389/fpsyg.2022.959259
37. Erdem, C., & Kaya, M. (2023). The relationship between school and classroom climate, and academic achievement: A meta-analysis. School Psychology International, 45(4), 380-408. https://doi.org/10.1177/01430343231202923 (Original work published 2024)
38. Estuita, S. S., & Relente, R. (2025). The Impact of Comfort Room Cleanliness on the Academic Engagement of Senior High School Students. Zenodo Repository.
39. Fretes, G., & Palau, R. (2025). The Impact of Noise on Learning in Children and Adolescents: A Meta-Analysis. Applied Sciences, 15(8), 4128.
40. Fisher, D., Frey, N., Ortega, S., & Hattie, J. (2023). Teaching Students to Drive Their Learning: A Playbook on Engagement and Self-Regulation, K-12. Corwin Press.
41. Florescu, O., Becea, L., & Mezei, M. (2018). Optimizing the Structuring of Physical Effort During Physical Education Lessons According to Body Particularities Assessed Through Bioelectric Impedance Using Bodyvision Software. In The International Scientific Conference eLearning and Software for Education (Vol. 3, pp. 253-260). " Carol I" National Defence University.
42. Gaisiey, I. K., Ntoaduro, A., Asamoah-Gyawu, J., Yeboah, G., Inkoom, D., Opoku, K., ... & Mensah, G. A. (2025). Impact of Positive Learning Environment on Students' Academic Performance in Colleges of Education. Canadian Journal of Educational and Social Studies, 5(1), 238-253.
43. García, E., & Weiss, E. (2020). COVID-19 and student performance, equity, and US education policy: Lessons from pre-pandemic research to inform relief, recovery, and rebuilding. Economic Policy Institute.
44. Garcia, A., & Nichols, T. P. (2021). Digital platforms aren't mere tools —they're complex environments. Phi Delta Kappan, 102(6), 14-19. https://doi.org/10.1177/0031721721998148 (Original work published 2021)
45. Garcia, L. D. (2025). Study habits, learning environment and academic performance in statistics and probability of senior high school students. International Journal of Research Studies in Education, 14(9), 1-23. https://doi.org/10.5861/ijrse.2025.25079
46. Gloc, R. (2024). Sequential explanatory design in research on digitized voters-users: ethical aspects, diagnosis of methodological challenges and recommendations for researchers. Zarządzanie Mediami, 12(3), 197-208.
47. Grankina, V., Krasnikova, I., Smirnova, Y., Kulibaba, I., & Barinov, V. Digital Transformation of the Educational Process in Schools of Kazakhstan: The Concept of Intelligent Assistant in School Physics Curriculum. In Frontiers in Education (Vol. 11, p. 1766616). Frontiers.
48. Guo, W., Wang, J., Li, N., & Wang, L. (2025). The impact of teacher emotional support on learning engagement among college students mediated by academic self-efficacy and academic resilience. Scientific Reports, 15(1), 3670.
49. Hassan, M. (2023). Descriptive research design-types, methods and examples. Research Method.
50. Hattie, J. (2023). Visible learning: The sequel. New York.
51. Hayati, N., Ismail, M., & Zukri, P. (2025). Peer Social Support Enhances a Student's Motivation to Engage in Studying. Global Perspectives in Education Journal, 1(1), 71-79.
52. Hoferichter, F., Kulakow, S., & Hufenbach, M. C. (2021). Support from parents, peers, and teachers is differently associated with middle school students' well-being. Frontiers in Psychology, 12, 758226.
53. Huang, L., & Wang, D. (2023). Teacher support, academic self-efficacy, student engagement, and academic achievement in emergency online learning. Behavioral Sciences, 13(9), 704.
54. Ibrahim, E., Napu, K., & Darman, D. (2023). The Influence of Environment and Satisfaction on Student Learning Motivation. West Science Journal Economic and Entrepreneurship, 1(05), 100-106.
55. Idris, M. O. A., Omar, A. M., Mohamed, M. J., Hussein, A. A., & Mohamed, M. M. O. (2025, March). The effect of the school environment on the provision of quality education: a study of schools in Mogadishu, Somalia. In Frontiers in Education (Vol. 10, p. 1541502). Frontiers Media SA.
56. Ignacio, M. J., Julhamid, N., & Asiri, M. (2024). Teachers' feedback and English academic achievement of grade 8 and 9 students at Sulu State College Laboratory High School. Journal of Education and Academic Settings, 1(1), 1-19.
57. Incekara, C. O. (2022). Designing ergonomic post-COVID-19 school furniture. South African Journal of Industrial Engineering, 33(2), 37–48. http://dx.doi.org/10.7166/33-2-2515

58. Jiang, A. L., & Zhang, L. J. (2021). University Teachers' Teaching Style and Their Students' Agentic Engagement in EFL Learning in China: A Self-Determination Theory and Achievement Goal Theory Integrated Perspective. Frontiers in psychology, 12, 704269. https://doi.org/10.3389/fpsyg.2021.704269
59. Jin, S., & Peng, L. (2022). Classroom perception in higher education: The impact of spatial factors on student satisfaction in lecture versus active learning classrooms. Frontiers in Psychology, 13, 941285.
60. Kassab, S. E., Rathan, R., Taylor, D. C., & Hamdy, H. (2024). The impact of the educational environment on student engagement and academic performance in health professions education. BMC medical education, 24(1), 1278.
61. Kilday, J. E., & Ryan, A. M. (2025). Connecting engagement to classroom friendships and popular peers' prosocial behaviour. British Journal of Educational Psychology.
62. Kirkil, G. (2025). Effects of classroom temperature and humidity on student learning performance: an experimental study using sensor-based monitoring. Frontiers in Built Environment, 11, 1678438.
63. Konstantinidis, A. (2024). An integrative review of the literature on factors influencing student well-being in the learning environment. International Journal of Educational Research Open, 7, 100384.
64. Kumar, A., Krishnamurthi, R., Bhatia, S., Kaushik, K., Ahuja, N. J., Nayyar, A., & Masud, M. (2021). Blended learning tools and practices: A comprehensive analysis. Ieee Access, 9, 85151-85197.
65. Lavy, V. (2020). What's in a name? The effect of school infrastructure on student outcomes. Economics of Education Review, 77, 101996. https://doi.org/10.1016/j.econedurev.2020.101996
66. Liu, C., & Chen, Y. (2020). School environment and student academic performance: Evidence from a nationwide survey. International Journal of Educational Research, 103, 101623. https://doi.org/10.1016/j.ijer.2020.101623
67. Li, Y., Sueb, R., & Said Hashim, K. (2025). The relationship between parental autonomy support, teacher autonomy support, peer support, and university students' academic engagement: the mediating roles of basic psychological needs and autonomous motivation. Frontiers in Psychology, 16, 1503473.
68. Lizarte Simón, E. J., Gijón Puerta, J., Galván Malagón, M. C., & Khaled Gijón, M. (2024). Influence of self-efficacy, anxiety and psychological well-being on academic engagement during university education. Education Sciences, 14(12), 1367.
69. Loyong, D. L., Lapeña, M. A. G., Hesera, H. G. M., & Bacatan, J. R. (2026). Students' Perception on Using Classroom Design, Student Engagement, and Academic Performance among Grade 3 Learners. International Journal of Social Sciences and English Literature, 10(1), 6-17.
70. Mahoney, J. L., Weissberg, R. P., Greenberg, M. T., Dusenbury, L., Jagers, R. J., Niemi, K., ... & Yoder, N. (2021). Systemic social and emotional learning: Promoting educational success for all preschool to high school students. American Psychologist, 76(7), 1128.
71. Mallillin, R. C. (2025). Classroom Design on Student Learning Engagement towards Holistic Academic Performance. ResearchGate. Retrieved from https://www.researchgate.net/publication/392117850_Classroom_Design_on_Student_Learning_Engagement_towards_Holistic_Academic_Performance
72. McKeown, R. P. (2025). Physical Classroom Environment Impact on Academic Achievement and Mental Well-Being.
73. Menken, M. S., Isaiah, A., Liang, H., Rivera, P. R., Cloak, C. C., Reeves, G., ... & Chang, L. (2022). Peer victimization (bullying) on mental health, behavioral problems, cognition, and academic performance in preadolescent children in the ABCD Study. Frontiers in psychology, 13, 925727.
74. Mercugliano, A., Corbani, A., Bigozzi, L., Vettori, G., & Incognito, O. (2025). The effects of classroom acoustic quality on student perception and wellbeing: a systematic review across educational levels. Frontiers in Psychology, 16, 1586997.
75. Merritt, R. D. (2024). Classroom environment. In Education Research Starters
76. Miller, R., & Kimmel, H. (2020). Educational environments and learning engagement: A study of school facilities in under-resourced communities. Journal of Educational Psychology, 112(4), 694–708.
77. Mindo, A. J., & Paglinawan, J. L. (2025). The relationship between classroom environment and learners' motivation in science. International Journal of Research and Innovation in Social Science.
78. Mohamad, S. L. (2024). Learning Environment and Academic Engagement in Science of Junior High School Students. Online Submission, 141(1), 233-240.
79. Navarro, A. M. (2022). School infrastructure in the Philippines: Where are we now and where should we be heading? (No. 2022-10). PIDS Discussion Paper Series.

80. Nunez, J. A., et al. (2025). Classroom environment and its influence on learners' academic achievement. eJournals.ph. https://www.ejournals.ph/article.php?id=28459
81. Ntumi[1], S., Courage Kwaku, K., Agyemang, K. et al. Assessing what matters: integrating social-emotional learning into classroom assessment for pupil well-being in Ghanaian basic schools. Sci Rep **15**, 45127 (2025). https://doi.org/10.1038/s41598-025-33328-5
82. Organisation for Economic Co-operation and Development (OECD). (2021). Designing learning environments: The importance of space, light, and air. OECD Publishing. https://www.oecd.org/education/
83. Organisation for Economic Co-operation and Development. (2023). Education at a glance 2023: OECD indicators. OECD Publishing. https://doi.org/10.1787/e13bef63-en
84. Oweisana, G. C. (2025). The Impact of Noise-Induced Stress on Cognitive Development of Students and Its Implication for Academic Performance. Journal of Guidance and Counselling Studies, 9(2), 148-163.
85. Ozcan, M. (2021). Factors affecting students' academic achievement according to the teachers' opinion. Education Reform Journal, 6(1), 1-18.
86. Pan, Z., Wang, Y., & Derakhshan, A. (2023). Unpacking Chinese EFL students' academic engagement and psychological well-being: The roles of language teachers' affective scaffolding. Journal of Psycholinguistic Research, 52(5), 1799-1819.
87. Panulaya, A. S. H. (2024). Factors Influencing Learners'academic Performance in Kinoguitan District, Division of Misamis Oriental. Factors Influencing Learners'academic Performance in Kinoguitan District, Division of Misamis Oriental, 144(1), 23-23.
88. Patierez, J. G. (2024). Effects of Learning Motivation and Engagement on the Academic Performance and Satisfaction of Senior High School Students. Dinkum Journal of Social Innovations, 3(05), 251-266.
89. Peng, Z., Zhang, R., Dong, Y., & Liang, Z. (2024). A study on the relationship between campus environment and college students' emotional perception: a case study of Yuelu Mountain National University Science and Technology City. Buildings, 14(9), 2849.
90. Pradhan, S., Jang, Y., & Chauhan, H. (2024). Investigating effects of indoor temperature and lighting on university students' learning performance considering sensation, comfort, and physiological responses. Building and Environment, 253, 111346.
91. Putri, Lyindira & Rezani, Muhammad & Hermina, Dina. (2025). CORRELATIONAL RESEARCH DESIGN. Jurnal Riset Multidisiplin Edukasi. 2. 306-317. 10.71282/jurmie.v2i6.456.
92. Quansah, F., Hagan Jr, J. E., Sambah, F., Frimpong, J. B., Ankomah, F., Srem-Sai, M., ... & Schack, T. (2022). Perceived safety of learning environment and associated anxiety factors during COVID-19 in Ghana: Evidence from physical education practical-oriented program. European Journal of Investigation in Health, Psychology and Education, 12(1), 28-41.
93. Rafiq, S., Afzal, A., & Kamran, F. (2022). Impact of school environment on students' academic achievements at the university level. VFAST Transactions on Education and Social Sciences, 10(4), 19-30.
94. Regidor, Analyn R., Armida T. Vesmanos, and Prima O. Deguito. 2024. "The Impact of Supportive Learning Environment on Student Learning Motivation of Senior High School Students". Asian Journal of Education and Social Studies 50 (7):558-71. https://doi.org/10.9734/ajess/2024/v50i71487.
95. Renaud, F., Verduyckt, I., Chang, T., Lacerda, A., Borges, C., Bockstael, A., & Bouserhal, R. E. (2024). Student's self-reported experience of soundscape: The link between noise, psychological and physical well-being. International Journal of Environmental Research and Public Health, 21(1).
96. Romero, C. (2026). Effectiveness of Flexible Learning Spaces on the Performance in English of Grade Six Pupils. International Journal of Sustainability and Advanced Integrated Research, 2(1), 353-359. https://doi.org/10.65339/ijsair.V2.I1.40
97. Rosa, E. M., & Tudge, J. R. H. (2021). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology. Journal of Family Theory & Review, 13(1), 1–14. https://doi.org/10.1111/jftr.12379
98. Salar, M., Ragandang, E. F., Orpilla, M. Q., Pagara, P. G., Cabana, S., Paderna, L. J., & Quiño-Justol, J. (2024). Oplan Baklas: Examining the Impact of Classroom Design on the Academic Performance of Grade 3 Learners. Universal International Journal of Research and Technology (UIJRT), 5.
99. Sangalang, S. O., Lemence, A. L. G., Ottong, Z. J., Valencia, J. C., Olaguera, M., Canja, R. J. F., ... & Kistemann, T. (2022). School water, sanitation, and hygiene (WaSH) intervention to improve

malnutrition, dehydration, health literacy, and handwashing: a cluster-randomised controlled trial in Metro Manila, Philippines. BMC Public Health, 22(1), 2034.

100. Selda, G. D., Ong, J. K. D., Famaranglas, B. L., Camus, M. M., & Cosme, J. T. (2025). Learning environment and academic achievement: A descriptive-correlational study of fifth graders. Psychological Education Journal, 34(5), 630–637. https://doi.org/10.70838/pemj.340509
101. Sirojiddin o'g'li, D. Z. (2025). THE IMPACT OF CLASSROOM DESIGN ON STUDENT LEARNING. The latest pedagogical and psychological innovations in education, 2(5), 16-19.
102. Slavin, R. E., Madden, N., & Ross, S. (2025). Educational psychology: Theory and practice. Pearson. One Lake Street, Upper Saddle River, New Jersey 07458.
103. Solas-Martínez, J. L., Rusillo-Magdaleno, A., Garrote-Jurado, R., & Ruiz-Ariza, A. (2025). Association of High Levels of Bullying and Cyberbullying with Study Time Management and Effort Self-Regulation in Adolescent Boys and Girls. Education Sciences, 15(5), 563.
104. Sugandhi, & Retnawati. (2025). The Impact of Learning Environment and Learning Facilities on Students' Academic Achievement in Economics at MA Man'baul Ulum Serpong. International Journal of Economics Education Research (IJEER), 6(1), 1–12. Retrieved from https://openjournal.unpam.ac.id/index.php/IJEER/article/view/48563
105. Sun, R., & Firzan, M. (2024). Investigating User Feedback for Learning Space Design in Primary Schools of Shandong Province, China. Buildings, 14(8), 2467.
106. Tapia-Fonllem, C., Fraijo-Sing, B., Corral-Verdugo, V., Garza-Terán, G., & Moreno-Barahona, M. (2020). School environments and elementary school children's well-being in northwestern Mexico. Frontiers in psychology, 11, 510
107. Tareen, P., & Kiazi, A. N (2020). A Study on School Environment and Its Impact on Students Academic Achievements in Private and Public Schools of Quetta City. BALOCHISTAN STUDY CENTRE UNIVERSITY OF BALOCHISTAN, QUETTA-PAKISTAN, 8.
108. Tobia, V., Sacchi, S., Cerina, V., Manca, S., & Fornara, F. (2022). The influence of classroom seating arrangement on children's cognitive processes in primary school: the role of individual variables. Current Psychology, 41(9), 6522-6533.
109. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. https://sdgs.un.org/goals
110. UNESCO. (2020). Global education monitoring report 2020: Inclusion and education. All means all. UNESCO Publishing. https://www.unesdoc.unesco.org/
111. UNESCO. (2022). Reimagining Our Futures Together: A New Social Contract for Education
112. UNICEF Philippines. (2022). Consolidated Emergency Report 2022. UNICEF Philippines. https://open.unicef.org/sites/transparency/files/2023-05/Philippines%20CER%202022.pdf
113. Valdenaro, F. (2026). Effects of Classroom Environment on the Academic Performance of Primary Grade Pupils. International Journal of Sustainability and Advanced Integrated Research, 2(1), 367-373.
114. Wang, M. T., Degol, J. L., & Ye, F. (2021). School climate and academic achievement: A meta-analytic review. Child Development, 92(3), 1033-1054.
115. Wang, Y., Wang, L., Yang, L., & Wang, W. (2024). Influence of perceived social support and academic self-efficacy on teacher-student relationships and learning engagement for enhanced didactical outcomes. Scientific Reports, 14(1), 28396.
116. Wargocki, P. (2022). Effects of Classroom Air Quality on Learning in Schools. In: Zhang, Y., Hopke, P.K., Mandin, C. (eds) Handbook of Indoor Air Quality. Springer, Singapore. https://doi.org/10.1007/978-981-16-7680-2_65
117. Wentzel, K. R., Jablansky, S., & Scalise, N. R. (2021). Peer social acceptance and academic achievement: A meta-analytic study. Journal of Educational Psychology, 113(1), 157.
118. Werang, B. R., Agung, A. A. G., Leba, S. M. R., & Asaloei, S. I. (2025). School environment, student learning motivation, and academic achievement among the state junior high school students. IRASS Journal of Arts, Humanities and Social Sciences, 2(5), 85-91.
119. Widiastur, K., Susilo, M. J., & Nurfinaputri, H. S. (2020). How Classroom Design Impacts for Student Learning Comfort: Architect Perspective on Designing Classrooms. International Journal of Evaluation and Research in Education, 9(3), 469-477.
120. World Bank. (2021). World Bank Approves Support to Help Ensure Safer, Resilient Schools and Strengthen Recovery in the Philippines. World Bank Group. https://www.worldbank.org/

121. Yahaya, M., Braimah, I., Adu-Gyamfi, A., & Nanor, M. A. (2025). Built environment of basic schools and performance outcomes in rural Ghana: learners' voice. Discover Education, 4(1), 1-18.
122. Zhang, Y., et al. (2025). Effects of classroom design characteristics on children's physiological and psychological responses: A virtual reality experiment. Building and Environment, 267, 112274. https://doi.org/10.1016/j.buildenv.2024.112274
123. Zhao, Y., & Sang, B. (2025). The Effect of Social–Emotional Learning Programs on Elementary and Middle School Students' Academic Achievement: A Meta-Analytic Review. Behavioral Sciences, 15(11), 1527.