Article

The Influence of Bare Classroom Wall Designs on Student Achievement

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Abstract: This study explores the impact of bare classroom walls on various aspects of student learning, including academic performance, class participation, and emotional well-being. While the minimalist classroom design is perceived to create a calm and focused learning environment, the study finds that its effects on academic outcomes are moderate and vary depending on the specific factor being considered. Although teachers generally believe that less visual clutter can enhance students' ability to concentrate and reduce distractions, the statistical analysis reveals that bare classroom walls do not have a significant influence on students' performance in core subjects such as English, Mathematics, and Science. These findings suggest that while minimalist classroom environments may offer some benefits, particularly in reducing cognitive overload and promoting a focused atmosphere, they do not directly translate into improved academic achievement. The study highlights the need for a more nuanced understanding of how classroom environments impact different aspects of student learning and suggests that further research is needed to explore the conditions under which minimalist designs may be most effective.

Introduction

The physical classroom environment plays a crucial role in shaping students' learning experiences and outcomes, serving as both a cognitive and emotional space where learning occurs (Yildirim, 2020). Classrooms are not just containers of students and teachers but active agents in the educational process, influencing behavior, engagement, and achievement (Benade, 2021). Traditionally, classroom walls have

been viewed as vital for displaying educational materials, student work, and motivational posters, thought to enhance the learning atmosphere (Rashid & Zaman, 2019). The presence of visual stimuli on walls is often linked to creating a stimulating and engaging environment, believed to support cognitive development (Smith, 2022). However, in recent years, there has been a growing interest in the concept of bare or minimalist classroom walls, which prioritize simplicity and reduce visual clutter (Kwon & Lee, 2021). Proponents of bare walls argue that they minimize distractions and help students focus more on the instructional content (McClelland & Reardon, 2023). The minimalist approach suggests that an uncluttered environment may foster better concentration and reduce cognitive overload (Patel & Ahuja, 2024). Despite these emerging views, the traditional perception of classroom walls as dynamic learning tools remains deeply ingrained in educational practices (Niemi, 2019).

In contrast to the minimalist approach, traditional classrooms have often embraced highly decorated walls filled with educational posters, charts, and student work (Jones & Edwards, 2020). These decorated environments are designed to create a vibrant, stimulating space that is thought to inspire learning and creativity (Huang & Tsai, 2021). Educators have long believed that visually rich environments contribute to a more engaging and motivating classroom atmosphere, providing students with continuous access to educational content even when not actively engaged in lessons (Garcia & Martinez, 2022). However, recent studies have begun to challenge this notion, suggesting that overly decorated walls can lead to sensory overload and distract students from the core learning activities (Chen & Xu, 2023). The rationale behind the adoption of bare classroom walls is rooted in the idea that less visual clutter can enhance students' ability to concentrate and process information more effectively (Lee & Park, 2022). This approach aligns with the broader minimalist movement in education, which advocates for simplicity in design to promote clarity and focus (Robinson & Kim, 2024). As a result, some educators are reevaluating the necessity of highly decorated classrooms and considering the potential benefits of more streamlined, minimalist environments (Sanchez & Hernandez, 2021). The shift towards bare walls reflects a growing recognition that less might be more when it comes to creating effective learning spaces (Nguyen & Tran, 2023).

Theories related to environmental psychology emphasize the significant impact that physical spaces have on individuals' cognitive and emotional states, particularly in learning environments (Gifford, 2021). Environmental psychology suggests that the design of a classroom, including the presence or absence of visual stimuli, can influence students' attention, behavior, and overall academic performance (Wang & Zhang, 2022). One key theory relevant to this discussion is the cognitive load theory, which posits that the human brain has a limited capacity for processing information at any given

time (Sweller, 2019). According to this theory, excessive visual stimuli in a classroom can overwhelm students' cognitive resources, leading to reduced focus and learning efficiency (Paas & Sweller, 2020). In this context, minimalist classroom walls are thought to reduce extraneous cognitive load, allowing students to allocate more mental resources to the learning task at hand (Leppink & Daryanto, 2021). Additionally, the reduction of visual clutter is believed to help students maintain better attention and engagement during lessons, as there are fewer distractions competing for their cognitive resources (Mayer & Fiorella, 2022). This theoretical perspective supports the idea that simpler, less decorated classroom environments may be more conducive to effective learning (Kalyuga & Sweller, 2023). As educators and researchers continue to explore the relationship between environment and learning, cognitive load theory provides a valuable framework for understanding how classroom design impacts student outcomes (Ayers & van Gog, 2024).

Existing studies on the impact of bare classroom environments on student achievement have produced mixed results, reflecting the complexity of this issue (Smith et al., 2019). Some research suggests that minimalist classroom designs can lead to improved academic performance, particularly in younger students who are more susceptible to distraction (Jones & Davis, 2020). For example, a study by Lee and Kim (2021) found that students in classrooms with less visual clutter performed better on tests of attention and memory compared to those in more decorated environments. Similarly, Robinson and Hernandez (2022) reported that bare walls helped reduce off-task behavior in elementary school classrooms, leading to more focused learning. However, other studies have raised concerns that overly minimalist environments might lack the stimulation needed to engage all students, particularly those who thrive in visually rich settings (Garcia & Nguyen, 2023). Research by Patel and Xu (2023) found that while some students benefited from reduced distractions, others reported feeling that the bare classroom lacked the inspiration and creativity they associated with a more decorated space. These conflicting findings highlight the need for further research to determine how different students respond to minimalist classroom environments and under what conditions bare walls may be most effective (Nguyen & Zhang, 2024).

Despite the growing interest in the impact of minimalist classroom designs, significant research gaps remain in understanding their full effects on student achievement (Chen & Lee, 2019). One major gap is the lack of longitudinal studies that track student performance over time in minimalist versus traditionally decorated classrooms (Kwon & Tsai, 2020). While short-term studies provide insights into immediate effects, they do not capture how these environments might influence learning outcomes across an entire academic year or longer (Wang & Martinez, 2021). Additionally, there is limited research

exploring the differential impacts of bare classroom walls on diverse student populations, including those with varying learning styles, abilities, and cultural backgrounds (Sanchez & Kim, 2022). Another gap lies in the understanding of teacher perceptions and how these influence the implementation and effectiveness of minimalist classroom designs (Niemi & Hernandez, 2020). Teachers' attitudes towards classroom aesthetics and their beliefs about what constitutes an effective learning environment can significantly shape the classroom atmosphere (Benade & Patel, 2021). Moreover, existing studies often overlook the potential psychological effects of bare walls on students' emotional well-being and sense of belonging in the classroom (Robinson & Edwards, 2022). Addressing these gaps through comprehensive, long-term research will be essential to fully understanding the role of minimalist classroom environments in education (Nguyen & Lee, 2023). Given these research gaps, future studies should focus on several key areas to better understand the influence of bare classroom wall designs on student achievement. Moreover, future studies should examine the psychological effects of bare walls on students' emotional well-being, including feelings of comfort, security, and belonging within the classroom. Addressing these areas, research can provide a more comprehensive understanding of how minimalist classroom wall designs impact student learning and offer practical recommendations for educators and policymakers.

Methodology

This study employed a descriptive correlational research design to investigate the relationship between teachers' perceptions of the influence of bare classroom walls on learners' learning, behavior, and attention, and how these perceptions correlate with learners' academic performance. Data were collected using an adapted survey questionnaire, which included demographic information about the teachers and a series of questions aimed at gauging their views on the impact of bare classroom walls. Responses were measured on a 4-point Likert scale, ranging from "Strongly Agree" to "Disagree," to quantify the teachers' perceptions. The study was conducted at Cabancalan II Elementary School in Mandaue City, where a convenience sampling method was used to select the participants, ensuring that readily accessible teachers were included in the survey. Statistical analysis played a crucial role in this research, with descriptive statistics used to summarize the data and Pearson's correlation analysis employed to explore the relationship between the perceived influence of classroom wall designs and students' academic performance. The IPO (Input-Process-Output) model provided a structured framework for organizing and analyzing the data, ensuring a systematic approach to understanding the interaction between the study's variables. This methodology allowed for a comprehensive examination of how

classroom wall design may impact educational outcomes, based on teachers' insights and the academic performance of their students.

Results and Discussion

Table 1. Improvement of Learning Outcomes

Improvement of Learning Outcomes	Mean	VD
Clean classroom walls promote pupils' concentration on educational resources.	3.71	SA
Minimal adornments on classroom walls enhance the understanding of academic content.	3.23	A
Streamlined classroom decor minimizes diversions and enhances students' capacity to focus during instructional sessions.	3.42	SA
The presence of minor wall decorations in classrooms enhances students' information retention.	3.45	SA
Overall, bare classroom wall enhances pupils' academic achievement.	2.97	A
Grand Mean	3.35	SA

The data in Table 1 illustrates the relationship between classroom wall decor and learning outcomes, measured by various factors. The highest mean score (3.71) indicates that clean classroom walls significantly promote pupils' concentration on educational resources, supported by a "Strongly Agree" (SA) verdict. Similarly, the presence of minor wall decorations slightly enhances students' information retention, with a mean of 3.45 and also rated as SA. Streamlined classroom decor, which minimizes distractions, was also found to be beneficial for focus during instructional sessions, with a mean of 3.42, again supported by a SA verdict. Minimal adornments on classroom walls were associated with enhanced understanding of academic content, though this aspect received a slightly lower mean of 3.23 and an "Agree" (A) verdict. Conversely, the notion that bare classroom walls improve academic achievement had the lowest mean score of 2.97, indicating a less strong consensus on this point.

Table 2. Conducive for Learning

Conducive for Learning	Mean	VD
A classroom with bare walls is less congested and distracting for students to learn in.	3.32	SA
Less wall décor in the classroom encourages a more concentrated and well-organized learning environment.	3.36	SA
A classroom with bare walls encourages pupils to remain focused and involved in the learning process.	3.16	A
A classroom that is devoid of overbearing visual stimuli is conducive to a more effective learning environment.	3.06	A
Less wall decor in the classroom encourages students to participate actively in conversations and activities.	3.03	A
Grand Mean	3.19	A

The data in Table 2 examines the impact of classroom wall decor on creating a conducive learning environment. The results show that

classrooms with less visual clutter are generally perceived to enhance the learning atmosphere. The highest mean score (3.36) indicates that less wall decor contributes to a more concentrated and well-organized learning environment, receiving a "Strongly Agree" (SA) verdict. Similarly, a mean score of 3.32 suggests that bare walls make classrooms less congested and distracting, also supported by SA. However, when it comes to encouraging focus and involvement in the learning process, the mean score drops slightly to 3.16, with an "Agree" (A) verdict. The idea that classrooms devoid of overwhelming visual stimuli foster a more effective learning environment has a mean score of 3.06, and the notion that less wall decor encourages active participation has the lowest mean of 3.03, both of which are rated as A. The overall grand mean of 3.19, paired with an A verdict, indicates a general agreement that a classroom with minimal wall decorations is conducive to learning, though the consensus is not as strong as in other aspects of the classroom environment.

Table 3. Class Participation

Class Participation	Mean	VD
The absence of excessive decorations on classroom walls encourages students to actively participate in class discussions.	3.13	A
A more inclusive learning atmosphere where all students feel comfortable contributing is fostered by having bare walls in the classroom.	3.13	A
A classroom with minimal wall distractions promotes a sense of focus and engagement during group activities.	3.16	A
The lack of visual distractions on classroom walls promotes improved student participation and communication.	3.06	A
Students' willingness to participate actively in class and the general dynamics of the room are both positively impacted by bare walls.	3.00	A
Grand Mean	3.10	A

The data in Table 3 explores the relationship between classroom wall decor and student participation. Across all items, the findings indicate a moderate level of agreement that a classroom with minimal decorations fosters active class participation. The highest mean score (3.16) suggests that a classroom with minimal wall distractions promotes focus and engagement during group activities, with an "Agree" (A) verdict. Similarly, both the absence of excessive decorations and the creation of an inclusive learning atmosphere—where all students feel comfortable contributing—received a mean score of 3.13, also rated as A. The idea that a lack of visual distractions improves student participation and communication has a slightly lower mean score of 3.06. Finally, the perception that bare walls positively impact students' willingness to participate and the overall classroom dynamics is rated the lowest, with a mean of 3.00.

Table 4. Emotional Well-Being

Emotional Well-Being	Mean	VD
Bare classroom walls create a calm and less overwhelming learning environment, positively affecting students' emotional well-being.	3.29	SA
Students who learn in a classroom with few distractions from the wall experience less tension and anxiety.	3.16	A
A calm and relaxed atmosphere is fostered by bare classroom walls, which improves students' emotional states during instruction.	3.09	A
By lessening sensory overload, the lack of overbearing visual stimulation on classroom walls promotes students' emotional wellbeing.	3.03	A
The general emotional well-being and contentment of kids are positively impacted by bare classroom walls.	2.93	A
Grand Mean	3.10	A

The data in Table 4 evaluates the impact of bare classroom walls on students' emotional well-being. The results suggest that there is a moderate positive effect on emotional well-being associated with minimal wall decorations. The highest mean score (3.29) indicates that bare classroom walls are perceived to create a calm and less overwhelming learning environment, which strongly supports students' emotional well-being, as reflected by a "Strongly Agree" (SA) verdict. The notion that fewer distractions lead to less tension and anxiety among students received a mean score of 3.16, rated as "Agree" (A). Similarly, the perception that a calm and relaxed atmosphere is fostered by bare walls, thereby improving students' emotional states during instruction, has a mean score of 3.09, also rated A. The idea that reducing sensory overload through minimal visual stimulation promotes emotional well-being is supported with a mean score of 3.03. However, the belief that bare walls positively impact the general emotional well-being and contentment of students has the lowest mean score of 2.93, indicating a less strong consensus on this point.

Table 5. Learners Performance

Subjects	GPA	Interpretation
English	86.83	Very Satisfactory
Science	87.41	Very Satisfactory
Math	86.67	Very Satisfactory

The data in Table 5 presents the GPA scores of students across three subjects: English, Science, and Math, with each subject receiving an interpretation of "Very Satisfactory." The GPA for Science is the highest at 87.41, suggesting that students perform slightly better in this subject compared to the others. English follows closely with a GPA of 86.83, indicating a similar level of strong performance. Math, while slightly lower with a GPA of 86.67, still falls within the "Very Satisfactory" range, demonstrating consistent achievement across these core subjects. Overall, the data reflects a high level of academic performance

among students, with little variation in their success across English, Science, and Math.

Table 6. Level of Influence of Bare Classroom Walls on Learners Performance in English

Variables	r-value	p – value	Decision	Result
Improve Learning Outcomes	-0.059	0.753	Do Not Reject Ho	Not Significant
Conducive for Learning	-0.219	0.236	Do Not Reject Ho	Not Significant
Class Participation	-0.133	0.477	Do Not Reject Ho	Not Significant
Emotional Well-Being	-0.038	0.840	Do Not Reject Ho	Not Significant

*Significant at p<0.05 (two-tailed)

The data presented in Table 6 focused on evaluating the influence of bare classroom walls on learners' performance in English. Finding showed that improved learning outcomes, with r-value of -0.059 and a high p-value of 0.753, indicated a weak negative correlation and a non-significant impact. Similarly, conducive for learning had an r-value of -0.219 and a p-value of 0.236, suggesting a slightly stronger negative correlation, yet still not statistically significant. Moreover, class participation, with r-value of -0.133 and a p-value of 0.477, also displayed a weak negative correlation and lacked statistical significance. Lastly, emotional well-being exhibited an r-value of -0.038 and a p-value of 0.840, indicating an extremely weak negative correlation and no significant effect. This indicated that results were not significant hence, the null hypothesis was retained. Moreover, findings showed that bare classroom walls did not have a significant impact on learners' performance in English.

Table 7. Level of Influence of Bare Classroom Walls on Learners Performance in Mathematics

Variables	r-value	p – value	Decision	Result
Improve Learning Outcomes	-0.127	0.495	Do Not Reject Ho	Not Significant
Conducive for Learning	-0.282	0.124	Do Not Reject Ho	Not Significant
Class Participation	-0.138	0.460	Do Not Reject Ho	Not Significant
Emotional Well-Being	-0.038	0.839	Do Not Reject Ho	Not Significant

*Significant at p<0.05 (two-tailed)

Table 7 presented the analysis of the influence of bare classroom walls on learners' performance in Mathematics. The findings showed that

improved learning outcomes had an r-value of -0.127 and a p-value of 0.495, indicating a weak negative correlation without statistical significance. The conducive for learning had an r-value of -0.282 and a p-value of 0.124, which suggested a somewhat stronger negative correlation compared to the other variables, yet it still fell short of statistical significance. For class participation, the r-value was -0.138 and the p-value was 0.460, demonstrating a weak negative correlation and a lack of significant impact. Similarly, the emotional well-being, with an r-value of -0.038 and a p-value of 0.839, showed an extremely weak negative correlation and was not significant. This indicated that results were not significant hence, the null hypothesis was retained. Moreover, findings showed that bare classroom walls did not have a significant impact on learners' performance in Mathematics.

Table 8. Level of Influence of Bare Classroom Walls on Learners Performance in Science

Variables	r-value	p – value	Decision	Result
Improve Learning Outcomes	0.018	0.925	Do Not Reject Ho	Not Significant
Conducive for Learning	-0.114	0.543	Do Not Reject Ho	Not Significant
Class Participation	0.013	0.944	Do Not Reject Ho	Not Significant
Emotional Well-Being	0.077	0.681	Do Not Reject Ho	Not Significant

*Significant at $p<0.05$ (two-tailed)

Table 8 evaluated the impact of bare classroom walls on learners' performance in science. Findings showed that improved learninonclug outcomes had an r-value of 0.018 with a p-value of 0.925, indicating an extremely weak positive correlation and no statistical significance. Conducive for learning on the other hand exhibited with r-value of -0.114 and a p-value of 0.543, suggesting a weak negative correlation. In the case of class participation, with the r-value of 0.013 and the p-value being 0.944, again showed an extremely weak positive correlation without significance. Lastly, emotional well-being had r-value of 0.077 and a p-value of 0.681, indicating a very slight positive correlation. This indicated that results were not significant hence, the null hypothesis was retained. Moreover, findings showed that bare classroom walls did not have a significant impact on learners' performance in Science.

Conclusion

Based on the results, it can be concluded that while certain aspects of bare classroom walls, such as promoting a calm and focused learning environment, are perceived to have positive effects on learning outcomes, class participation, and emotional well-being, these effects are generally moderate. The impact of minimal wall decor is seen as

beneficial for creating a conducive learning environment and improving students' focus and engagement, yet the strength of these benefits varies. Importantly, the analysis reveals that the presence of bare classroom walls does not have a statistically significant influence on learners' performance in English, Mathematics, or Science. Despite some perceived benefits, the actual impact on academic performance across these subjects appears to be negligible, suggesting that other factors may play a more critical role in influencing student outcomes.

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