EXPLORING THE IMPACT OF PHYSICAL CLASSROOM ENVIRONMENT ON STUDENT ENGAGEMENT IN HIGH SCHOOL ENGLISH CLASSES

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Abstract. Creating an optimal learning environment is crucial for promoting student engagement and academic success in high school English classes however several issues can significantly impact student engagement and overall learning outcomes. Hence, this research would like to determine the significant impact of physical classroom environment indicators on student engagement in high school English classes. This study utilized non-experimental quantitative research design employing a descriptive-correlation technique. Statistical analysis such as mean, standard deviation, Pearson R correlation and Multiple Linear Regression were used in treating the data generated in the study. The respondents of the study were the 120 high school educators teaching English subject who worked at secondary schools under Tugbok District located in Davao City. These respondents were selected using random sampling method. Descriptive results of the study revealed that the physical classroom environment and the student engagement of high school English classes are oftentimes evident. Consequently, the inferential results of the study suggested that there is a significant relationship between physical classroom environment and student engagement of high school English classes. Likewise, the regression analysis resulted that classroom layout, classroom resources, lighting, and noise level as indicators of physical classroom environment significantly influenced the student engagement of high school English classes.

KEY WORDS

1. Physical Classroom Environment.   2. Student Engagement.   3. English Teachers.

1. Introduction

Creating an optimal learning environment is crucial for promoting student engagement and academic success in high school English classes. The reason is that classroom environment, specifically the physical environment, plays a significant role in shaping students' attitudes, behaviors, and overall engagement in the learning process. This type of environment can provide comfort, motivation, improve collaboration and interaction, and stimulates multisensory learning. However, there were several issues experienced related to the physical environment such as the issues on classroom design and lay-out, availability and access of the resources in the classroom, the lighting issues as well as the classroom noise level issues. These said issues can significantly impact student engagement and overall learning

outcomes. Specifically, insufficient space, unpleasant seating, and poor visibility of instructional materials can impede students' ability to actively participate and learn (Bakhtiar et al., 2015; Khademi, 2017). Also, inadequate, or obsolete educational resources, limited textbook or technological tool availability, and a lack of various learning materials may hinder students' learning (Alghazo et al., 2019; Thurlow et al., 2013). Moreover, not enough classroom lighting might also affect student involvement. Poor lighting strains students' visual perception, causing pain and decreased concentration (Ozkan Tekkaya, 2018; Wargocki et al., 2020). In addition, a low or high-intensity illumination can cause fatigue, eyestrain, and decreased concentration, limiting students' ability to participate and learn. Lastly, classroom noise can hinder students' ability to participate and focus. This ambient noise either both external and internal, can distract students and impair their ability to focus and communicate (Shield Dockrell, 2013; Zaghloul Al-Rabiaah, 2019). Hence, excessive noise might impair students' ability to listen, comprehend, and engage in class discussions. Across the ASEAN countries, there were also cited related issues and challenges regarding the impact of classroom physical environment on student engagement in high school English classes. In Indonesia, inadequate classroom resources and facilities, such as limited access to textbooks, insufficient technology, and overcrowded classrooms, can negatively affect the classroom environment and student engagement (Wahyuni, 2017). In Singapore, high academic pressure, competitive educational systems, and emphasis on examination results may influence the classroom environment and student engagement, potentially affecting students' intrinsic motivation and engagement (Chen et al., 2016). In Thailand, varied student abilities, limited resources, and insufficient teacher training can present challenges in creating an inclusive and engaging classroom environment,

impacting student engagement (Nilsiam Koedjang, 2021). In the Philippine educational context, English teachers often face challenges with limited space and overcrowding in classrooms. Teachers strive to optimize available space and create an organized classroom layout that promotes collaboration, movement, and effective use of instructional materials (Santos, 2016). Also, they often encounter resource limitations which pushes them in finding creative ways to provide varied and relevant resources to enhance student engagement in high school English classes. Insufficient or outdated materials, limited access to textbooks, technology, and supplementary resources can hinder students' ability to fully engage with the subject matter (Alghazo et al., 2019; Tambasen, 2019). Moreover, lighting issues in Philippine classrooms can affect student engagement. Inadequate natural or artificial lighting may strain students' visual perception, leading to reduced focus and attention (Tucio, 2018). Finally, teachers experienced high levels of background noise, including external noise from nearby areas or within the classroom itself, which distract students and impede effective communication and concentration (Zaghloul Al-Rabiaah, 2019). Furthermore, the physical aspects of the classroom environment have been recognized as influential factors that can significantly impact student engagement (Stewart Lashbrook, 2017). And existing research has highlighted the importance of the classroom environment in influencing student engagement in various educational settings (Huang Reinhorn, 2015). However, limited studies have specifically examined the relationship between classroom environment and student engagement in the context of high school English classes. Hence, this study aims to address this gap by exploring the impact of classroom physical environment on student engagement, providing valuable insights for educators to create an effective learning environment.

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2. Methodology

This chapter discusses the research methods in conducting the study which are considered strategies or techniques utilized in the collection of data evidence for analysis to uncover new information or create better understanding of a topic. Contents of this chapter include the research design, research respondents of the study, research instrument and the data gathering procedures. In the preparation of this paper, the researcher employed artificial intelligence tools for proofreading. Specifically, AI was utilized to enhance the accuracy, coherence, and overall quality of the manuscript. This practice is being explicitly stated to maintain transparency and adhere to ethical standards in research. The usage of AI for proofreading reflects a commitment to leveraging advanced technologies responsibly and acknowledges the increasing prevalence and capability of AI in academic and professional writing.

2.1. Research Design—In this study, the researcher used a descriptive correlational strategy for non-experimental quantitative research. The descriptive design explains the researched population, circumstance, or phenomena. It emphasizes on addressing the how, what, when, and where questions rather than the why of a research topic. Quantitative research employs a deductive-inductive technique, which means it departs from a theoretical framework, the idea of experts, and develops issues and their answers based on the researchers' experience and knowledge (Tanzeh, 2011). This design is important to the research because it specifies the techniques and processes for gathering the necessary information, as well as the general operational pattern or framework of the project, which dictates what information is to be acquired from which sources using which methods (Nassaji, 2015).

In specific to this study, the descriptive part of the design of this study will be used in assessing the extent of the independent variable which is the physical classroom environment of high school English classes as perceived by teachers as well as the level of dependent variable which is the student engagement of high school English classes as perceived by teachers. In addition, Grove, Burns, and Gray (2012) noted that descriptive quantitative design may be used to generate theory, uncover difficulties with present practice, defend current practice, make judgments, or determine what others in comparable circumstances are doing. On the other hand, the correlational part of the design of this study will be used in determining the significant relationship between the two variables presented in this study. Also, this design also will be used to determine the impact of the independent variable of the study to its dependent variable.

2.2. Research Respondents—This study will be conducted in the secondary schools under Tugbok District located in Davao City. The one hundred and twenty (120) high school educators teaching English subject will serve as responders in this research. The respondents will be selected using the random sampling method. Random sampling is a crucial method in research that ensures the representativeness and generalizability of study findings. By randomly selecting individuals or elements from a larger population, each member has an equal chance of being included in the sample, minimizing bias, and increasing the likelihood of obtaining a diverse and accurate representation of the entire population. This approach enhances statistical validity, allowing for meaningful inferences and reliable conclusions about the population. Cochran (1977) emphasizes the significance of random sampling as it reduces selection bias, promotes objectivity in the research process,

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and enables researchers to draw broader implications and apply findings to real-world contexts. In addition, the researcher will ensure that several criteria will be met in selecting the respondents such as the years as high school teacher teaching English subject and the age of the respondents.

2.3. Research Instrument—Study Instruments are measuring instruments meant to collect data from research participants on a topic of interest. It must aid in addressing the research's goals, objectives, and research questions, as well as support or refute the study's premise (McMillan Schumacher, 2013). In this investigation, the researcher will use survey questionnaire as its instrument in gathering its data. The survey questionnaire will have two parts that would cater the two variables in the study. Relatively, the validity of the instrument will be assured by subjecting it for content validation to selected research experts and members of the panel committee. On the other hand, the survey instrument will be subjected also for pilot testing to determine its reliability. This will be computed using the value of the instrument's Cronbach's Alpha. For the first part of the survey instrument which will provide data on the data on the physical classroom environment, questions were adopted from study of Fraser (2018). Consequently, a five-point Likert Scale of the survey having five (5) as the highest and one (1) as the lowest, will be used in the process of interpreting its data. The scale with description and interpretation is shown in the next page. The following five order gradations with their respective range of means and descriptions were considered:

Rating on the Existence of Physical Classroom Environment

Range	Description	Interpretation
4.20-5.00	Very High	This means that high school English teachers strongly agree on the existence of the physical classroom environment.
3.40-4.19	High	This means that high school English teachers agree on the existence of the physical classroom environment.
2.60-3.39	Neutral	This means that high school English teachers neither agree nor disagree on the existence of the physical classroom environment.
1.80-2.59	Low	This means that high school English teachers disagree on the existence of the physical classroom environment.
1.00-1.79	Very Low	This means that high school English teachers strongly disagree on the existence of the physical classroom environment.

For the second part of the questionnaire which determine the level of student engagement, the researcher adopted questionnaire from the study of Lam Jimerson (2008). The same with the first part of the survey questionnaire, a five-point Likert Scale of the survey having five (5) as the highest and one (1) as the lowest in interpreting its data. The scale with description and interpretation is shown below. The following five order gradations with their respective

range of means and description were consid- ered:

Rating on the Student Engagement of High School Students in their English Class

Range	Descriptive Level	Interpretation
4.20-5.00	Very High	This means that the student engagement of high school students in their English class is always evident.
3.40-4.19	High	This means that the student engagement of high school students in their English class is often evident.
2.60-3.39	Moderate	This means that the student engagement of high school students in their English class is sometimes evident.
1.80-2.59	Low	This means that the student engagement of high school students in their English class is seldom evident.
1.00-1.79	Very Low	This means that the student engagement of high schoolstudents in their English class is not evident.

2.4. Data Gathering Procedure—At the outset of the data gathering procedure, the researcher will write a letter seeking permission from the Dean of the Graduate School so that this research study will be conducted. Next, the researcher will secure a letter asking for permission to the Schools Division Superintendent, Division of Davao del Sur through the channels of the Office of Public Schools District Supervisors (PSDS) of the selected different schools. Upon approval of the permit, the survey questionnaire will be ready for the conduct of the study. During the conduct of the study, the researcher will personally hand-in the survey questionnaire to the selected respondents. The questionnaire will be retrieved right after the respondents will be done answering the survey questions. The researcher will ensure that the collection and retrieval of data will be conducted following the IATF protocols for face-to-face learning delivery mode. Lastly, the collected data will be analyzed by a statistician using the different measures of treating the data as presented this chapter. The results in the treatment of the data were interpreted for further information of the study.

2.5. Data Analysis—The study will use the respondents' collected data for analysis. The following statistical tools will be used in the analysis and interpretation of the responses in this study: The mean is commonly used to measure the central tendency. Central tendency identifies a single value as representative of an entire distribution. It also provides an accurate description of the entire data (Creswell, 2013). In this study, mean will be used to determine the extent of physical classroom environment of high school English classes as perceived by the teachers in terms of classroom layout, classroom resources, lighting, and noise level as well as the student engagement of high school English classes as perceived by their teachers in terms of attentiveness, motivation and enthusiasm, participation, and active listening. The correlational test is one type of inferential statistics that investigates relationships between variables

without the researcher controlling or manipulating any of them. This statistical test reflects the strength and/or direction of the relationship between two (or more) variables. The direction of a correlation can be either positive or negative (Mukaka, 2012). This study used this type of analysis as hypothesis testing to determine the significant relationship between the physical classroom environment and the student engagement of high school English classes. Multiple linear regression (MLR) is a statistical technique for estimating the relationship among variables which have reason and result relation. The focus is to analyze the relationship between a dependent variable and independent variable and formulate the linear relation between the dependent and independent variable (Rencher and Christensen, 2012). Specifically, this analysis will determine the impact of the physical classroom environment to the student engagement of high school English classes. As a predictive analysis, the multiple linear regression was used to explain the relationship between one continuous dependent variable and two or more independent variables.

3. Results and Discussion

This chapter presents the results and discussions based on the data gathered after the conduct of this study. This includes the interpretation of the data and the repercussions of the findings of the study. The deliberations presented in this chapter are aligned to the statement of the problem cited in the previous chapters of this study. Specifically, the presentation for the results and discussions will start from the extent of physical classroom environment of high school English classes as perceived by teachers in terms of classroom layout, classroom resources, lighting, and noise level. This will be followed on the presentation of the level of student engagement of high school English classes as perceived by teachers in terms of attentiveness, motivation and enthusiasm, participation, and active listening. Next, will be the discussion of the results of the significant relationship between the extent of physical classroom environment of high school English classes as perceived by teachers and the level of student engagement of high school English classes as perceived by teachers. Lastly, the discussion of the results on which indicators of physical classroom environment of high school English classes significantly influence the student engagement of high school English classes.

Summary of the Extent of Physical Classroom Environment of High School English Classes as Perceived by Teachers The statistical result on the extent of physical classroom environment of high school English classes as perceived by teachers is shown in Table 1. The physical classroom environment encompasses the spatial and material attributes of the classroom, such as its arrangement, available resources, and visual elements, which collectively influence the physical surroundings experienced by students during the learning process (Fraser, 2018). The design of the learning environment encompasses the strategic organization of furniture, educational materials, and resources to facilitate student involvement, foster collaboration, and enhance accessibility to learning materials (Fisher Frey, 2015). The concept under consideration encompasses a range of circumstances and characteristics that influence the level of student involvement and participation in the learning process. These aspects include the physical environment, instructional strategies, and the quality of teacher-student interactions (Christenson, Reschly, Wylie, 2014).

Table 1. Summary of the Extent of Physical Classroom Environment of High School English Classes as Perceived by Teachers

Indicators	Mean	Descriptive Level
Classroom Layout	4.00	High
Classroom Resources	3.67	High
Lighting	3.57	High
Noise Level	3.84	High
Overall	3.77	High

Based on the analysis in the above table, the overall mean rating of the extent of physical classroom environment of high school English classes as perceived by teachers is 3.77. This numerical data result is equivalent to a "high" descriptive level rating which means that high school English teachers agree on the existence of physical classroom environment.

Summary of the Level of Student Engagement of High School English Classes as Perceived by Teachers

The statistical result on the level of student engagement of high school English classes as perceived by teachers is shown in Table 2. Student engagement refers to the active involvement and emotional investment of students in academic activities inside the classroom setting. The study conducted by Skinner, Kindermann, and Furrer (2019) centers on the active engagement of students and the cultivation of good emotional experiences in the learning process. According to Fredricks, Blumenfeld, and Paris (2014), this concept comprises the level of interest, passion, and sense of belonging that students experience inside the educational process. Furthermore, student involvement refers to the allocation of time and effort by students towards activities that are intended to enhance their educational experience. This encompasses a range of academic and extracurricular pursuits that enhance students' educational and personal growth (Kuh, 2019).

Table 2. Summary of the Level of Student Engagement of High School English Classes as Perceived by Teachers

Indicators	Mean	Descriptive Level
Attentiveness	4.02	High
Motivation and Enthusiasm	3.86	High
Participation	3.91	High
Active Listening	4.16	High
Overall	3.99	High

Based on the analysis presented in Table 2, the overall mean rating of the level of student engagement of high school English classes as perceived by teachers is 3.99. This numerical

data result had an equivalent descriptive rating equal to "high" which means that the that the student engagement of high school student in their English class is often evident.

Significant Relationship between Physical Classroom Environment and Student Engagement in High School English Classes

One of the aims of this study is to investigate the correlation between the physical classroom environment and the level of student participation in high school English lessons. The Pearson correlation coefficient (r) is a suitable statistical analysis method for examining the presented data, as it is commonly employed to assess the presence of a significant association between the means of two distinct groups (Creswell Poth, 2016). The significance level for this study is established at 0.05. The analysis result on the correlation between the physical classroom environment and student involvement in high school English sessions is presented in Table 3. The research reveals a robust positive and statistically significant association between the physical classroom environment and student engagement in high school English courses. The correlation coefficient (r-value) is determined to be 0.759, indicating a strong positive relationship. Additionally, the p-value is calculated to be 0.000, further confirming the significance of the link. Therefore, the null hypothesis posited in this study, which states that there is no statistically significant correlation between the physical classroom environment and student involve-

ment in high school English sessions, is refuted. The study's correlational analysis indicates that when teachers acknowledge the presence of a physical classroom setting in high school English lessons, there is a corresponding rise in student participation in those lessons. This finding is in line with existing literature that suggests the physical setting of a classroom can profoundly influence students' cognitive functions, emotions, and ultimately, their engagement in academic activities (Barrett et al., 2015). Elements such as classroom layout, lighting, and noise levels serve not merely as a backdrop but as active contributors to the learning process. In English classes, where engagement can be particularly critical given the importance of discussion, interpretation, and textual analysis, the impact of the physical environment becomes even more pronounced. The statistical significance of the research findings lends additional weight to the idea that investment in the physical aspects of educational settings can yield substantive returns in terms of student outcomes. By creating an environment conducive to learning, schools can effectively support pedagogical goals, such as encouraging active participation and fostering skills in critical thinking and analysis. Such environments can be particularly beneficial for the teaching of English, aiding the concentration needed for complex tasks like writing and the discussion necessary for literature study (Tanner, 2020).

Furthermore, the inferential analysis in Table 3 highlighted also the relationship between each indicator of physical classroom environment and student engagement in high school English courses. Based on the same analysis, there are significant correlations between each indicator of physical classroom environment and student engagement in high school English courses. Ranking each indicator specifically

with its correlation r-value, the correlation between classroom layout as indicator of physical classroom environment and student engagement in high school English courses came first with an ¬r-value equal to 0.660 and a p-value equal to 0.000. This means that there is a strong positive correlation between these two parameters.

Regression Analysis of the Physical Classroom Environment on the Student Engagement

Table 3. Significant Relationship between Physical Classroom Environment and Student Engagement in High School English Classes

Physical Classroom Environment	r	p-value	Decision on Ho
Classroom Layout	0.660	.000	Reject
Classroom Resources	0.524	.000	Reject
Lighting	0.516	.000	Reject
Noise Level	0.634	.000	Reject
Overall	0.759	.000	Reject

in High School English Classes

The last objective of this study is to determine which indicators of physical classroom environment significantly influence the student engagement in high school English classes. The Multiple Linear Regression (MLR) is best fit for this analysis since this statistical treatment is defined as a predictive analysis which is used to explain the relationship between one continuous dependent variable which is the English reading competencies among grade two students., and two or more independent variables which are the non-cognitive skills in terms of mindset, perseverance, social skills, and learning strate-

gies (Trek, 2019). Still, this data analysis is set with an alpha equal to 0.05. Based on the MLR analysis presented in Table 4, the overall statistical analysis of the study came up with a value of F that was 44.828 and a value of 0.000 for the p-value which is higher than the set critical value. This means that the physical classroom environment has a significant influence on the student engagement in high school English classes. This further implies that the regression analysis used in the study is useful which means that there is validity in the interpretation on the assumption of the said influences.

Table 4. Regression Analysis of Non-Cognitive Skills on the English Reading Competencies of Grade Two Students

Non-Cognitive Skills	B	Std. Error	Beta	t	Sig.	Decision on H0
(Constant)	1.072	0.234		4.588	.000	
Classroom Layout	0.303	0.048	.429	6.323	.000	Reject
Classroom Resources	0.215	0.057	.238	3.315	.001	Reject
Lighting	0.251	0.059	.269	3.572	.000	Reject
Noise Level	0.231	0.053	.321	4.362	.000	Reject

Note: R = .881; R^2 = .776; F-value = 44.828; p-value = .000

Moreover, this study reveals that various factors of the physical classroom environment, namely classroom layout, classroom resources, lighting, and noise level, have a significant impact on student engagement in high school English classes. Each of these elements positively correlates with the level of student engagement,

refuting the initial null hypothesis that posited no significant influence of these factors. Classroom layout (t-value = 6.323, p-value = .000) and noise level (t-value = 4.362, p-value = .000) particularly emerged as strong determinants, possibly because they directly affect both the delivery of instruction and students' ability to

focus on complex tasks like reading and writing (Shield Dockrell, 2018). Classroom resources (t-value = 3.315, p-value = .001) and lighting (t-value = 3.572, p-value = .000), although showing a moderate correlation, still contributed meaningfully to the engagement levels, supporting varied learning activities, and promoting well-being (Oblinger, 2016; Fredricks, Blumenfeld, Paris, 2014). Given the statistically significant findings, the initial null hypothesis of the study is conclusively rejected. The physical environment of a classroom is not a passive backdrop but an active determinant of educational outcomes. These results underline the idea that the physical aspects of a classroom are integral to the educational experience and play a significant role in determining how engaged students will be in high school English courses. Therefore, the study adds to the growing body of evidence asserting that educators and administrators should not overlook the importance of the physical classroom setting in pedagogical planning. Furthermore, the analysis of the study employs Multiple Linear Regression (MLR) to determine the influence of various aspects of the physical classroom environment on student engagement in high school English classes. One of the key metrics derived from this statistical treatment is the coefficient of determination, denoted as R^2, which stands at 0.776. This high R^2 value indicates that the analysis has a 77.60However, the R^2 value also leaves approximately 22.4Furthermore, the study's MLR analysis with a strong R^2 value reinforces the importance of the physical classroom environment in affecting student engagement in high school English courses. The statistical treatment establishes a high degree of confidence in the significance of the parameters examined while also leaving room for further exploration of additional variables that were not included in the study (Cohen, Cohen, West, Aiken, 2013).

4. Conclusions and Recommendations

Presented in this chapter are the findings of the study based on the outcome of the gathered data. The conclusions drawn from the findings of the study are likewise outlined in this section. To maximize the significant contribution of this study, the researcher laid down recommendations in this chapter.

4.1. Findings—High school English classrooms may do more to encourage student involvement and academic performance by providing a more conducive learning environment. The reason is because students' mindsets, actions, and level of interest in learning are profoundly influenced by the classroom environment, especially the physical setting. This setting has the potential to facilitate relaxation, inspiration, enhanced teamwork and communication, and multimodal learning. However, there were several problems with the physical environment, including problems with classroom design and layout, access to classroom supplies, lighting, and noise levels. These problems can have a major effect on students' motivation and their ability to study. In this study, a non-experimental quantitative research methodology using a descriptive correlation approach was applied. Statistical analyses such as the mean, Pearson R correlation, and Multiple Linear Regression were utilized. The participants in the research were one hundred twenty (120) high school educators teaching English subject who worked at secondary schools under Tugbok District located in Davao City. These respondents were chosen via a sample process known as random sampling method to minimize bias. Data were analyzed based on the survey questionnaires that were used by the researcher after

they had been modified to conform to the parameters of the study, which had been subjected to validation by industry professionals and had its reliability examined. Descriptive results of the study revealed that the physical classroom environment and the student engagement of high school English classes as perceived by teachers both obtained "high" descriptive level rating which means that these parameters of the study are oftentimes evident. Consequently, the inferential results of the study suggested that it failed to accept its null hypothesis since there is a significant relationship between physical classroom environment and student engagement of high school English classes. Likewise, the regression analysis resulted that classroom layout, classroom resources, lighting, and noise level as indicators of physical classroom environment significantly influenced the student engagement of high school English classes.

4.2. Conclusions—Based on the findings of this study, the following conclusions were offered: High school English teachers place a high level of importance on various elements of the physical classroom environment, each contributing uniquely to the teaching and learning experience. Analysis result demonstrates a broad consensus among high school English teachers about the importance of the physical classroom environment in facilitating effective teaching and learning. Classroom layout is viewed as the most critical aspect, indicating that the arrangement of furniture and space has a high level of influence on teaching efficacy and student engagement. Noise level also stands out as a significant factor, highlighting the role of a controlled acoustic environment in maintaining focus and facilitating communication. While all the indicators—ranging from classroom resources to lighting—are regarded as important, it's worth noting that no single element dominates the discourse. Each aspect has its own degree of importance, yet all fall within a range that teachers find acceptable or desirable. The

collective understanding among teachers suggests that the classroom environment is a complex ecosystem, where various elements interact to influence the educational process in a meaningful way. The data points to a generally high level of student engagement in high school English classes, as perceived by teachers. Across multiple dimensions of engagement—active listening, attentiveness, motivation and enthusiasm, and participation—teachers rated their students highly. Active listening emerged as the strongest form of engagement, with attentiveness following closely. These high mean ratings suggest a classroom atmosphere where students are not just physically present but are mentally and emotionally invested in the educational process. Despite the overall high ratings, the subtle variations between the different engagement indicators could be telling. For instance, while active listening and attentiveness garnered the highest scores, motivation and enthusiasm lagged somewhat behind, although still within a "high" descriptive level. This complex view can offer a more composite understanding of what 'engagement' means in this specific educational context, showing that while students may be paying attention and participating, there may be varying internal factors like motivation and enthusiasm that are less observable but equally important. The study conclusively shows that the physical classroom environment has a significant relationship on student engagement in high school English courses. Aspects such as classroom layout, noise level, classroom resources, and lighting were all found to have a positive correlation with how engaged students are in the learning process. The data particularly underscores the significance of classroom layout and noise level, both of which demonstrated strong positive relationships with student engagement. While all the elements studied contribute to a conducive educational setting, the results suggest that certain aspects hold more weight than others in

terms of fostering student engagement. Specifically, classroom layout and noise level emerged as stronger correlates compared to classroom resources and lighting, which also contribute positively but to a lesser degree. Therefore, the physical setting in a classroom serves as a vital component in shaping the learning experience for students in high school English courses. The study provides compelling evidence that educators and administrators should be mindful of these factors when considering how to create an engaging learning environment. The study conclusively establishes that various elements of the physical classroom environment, including layout, resources, lighting, and noise level, have a meaningful impact on student engagement in high school English classes. Factors such as classroom layout and noise level emerge as particularly potent determinants. These elements seem to exert a direct influence on both the delivery of instruction and students' ability to focus on academically demanding activities. Meanwhile, classroom resources and lighting, although having a more moderate impact, still significantly contribute to the overall level of student engagement by supporting varied learning activities and promoting well-being. In addition, the implications of these findings resonate strongly within the educational sphere, fundamentally challenging the notion that the physical classroom environment is merely a passive backdrop to the instructional process. Instead, this study supports the perspective that the physical aspects of a classroom serve as active determinants in educational outcomes, specifically in how engaged students are in the learning process. The research enriches the existing body of knowledge by reinforcing the importance of these physical elements in the broader context of educational efficacy and student engagement.

4.3. Recommendations—The following interventions were offered based on the conclusions of the study: Given the study's findings that classroom layout and noise level are particularly strong determinants of student engagement in high school English courses, the Department of Education should prioritize these factors in its policies. Specifically, it would be beneficial to develop guidelines for optimal classroom layouts that facilitate both individual and collaborative learning activities. Additionally, noise control measures, such as soundproofing materials and the arrangement of educational spaces to minimize external disruptions, should be integrated into new and existing school building designs. By focusing on these specific physical elements, the Department can create an educational environment that not only enhances teaching efficacy but also significantly improves student engagement, which in turn could positively affect academic outcomes. Based on the compelling evidence that the physical environment of the classroom significantly influences student engagement, the Department of Education should consider implementing guidelines that address optimal classroom layouts and noise control measures for high school English classes. As classroom layout and noise levels have been identified as particularly potent factors affecting both teaching efficacy and student engagement, it's crucial that new or existing educational facilities be designed or restructured to meet these insights. This could include recommendations for flexible seating arrangements that promote interactive learning, the use of sound-dampening materials, and proper placement of teaching resources. Such guidelines could form part of a broader initiative aimed at enhancing educational settings to boost both teacher effectiveness and student engagement. English teachers are advised to give particular attention to classroom layout and noise management as they have been identified as crucial factors influencing student engagement. Reconfiguring desks or seating arrangements to facilitate better eye contact, group interaction, and easier mobility could have a meaningful impact on learning efficacy. Additionally, im-

plementing noise reduction strategies, such as establishing class rules around noise, using soft furnishings that absorb sound, or strategically placing the teacher's desk to better monitor and control classroom acoustics, can contribute significantly to maintaining a focused learning environment. While resources and lighting also matter, optimizing layout and acoustics appears to offer the most immediate benefits in terms of engagement and effective teaching. Based on the study's findings, which underscore the significant impact of the physical classroom environment on student engagement, it's important for the students to be proactive in leveraging these elements to their advantage. If possible, students must arrive a few minutes early to class to choose a seat that best suits their learning style—whether they prefer the front row to minimize distractions or a seat near the window for natural light. If noise level is a concern, consider bringing earplugs or noise-cancelling headphones to help in focusing during independent work sessions. Keep a small desk lamp in an individual's locker if they find the classroom lighting insufficient and it's permitted by their school's policy. Actively engage with available classroom resources, such as whiteboards or interactive technology, to aid understanding and retention of material. By consciously optimizing their interaction with these physical elements, they can contribute to creating a more conducive learning environment themselves and potentially enhance their engagement in their high school English classes. Future researchers should focus on exploring the underlying mechanisms that make classroom layout and noise level particularly potent determinants of student engagement in high school English classes, as these factors have emerged as highly significant in the current study. Specifically, experimental designs involving varying classroom configurations or acoustic adjustments could offer insights into optimal setups for maximizing engagement. Additionally, while this study notes generally high levels of engagement based on teacher perceptions, there is an observed discrepancy in internal motivators like enthusiasm and motivation compared to observable behaviors like active listening and attentiveness. Therefore, future research should employ mixed methods approaches, incorporating both qualitative and quantitative data, to delve deeper into the nuanced aspects of student engagement. This could involve methods such as student self-reports, psychological scales measuring motivation, and even real-time classroom observations to capture a more holistic view of engagement beyond teacher perceptions. These targeted lines of inquiry would not only validate the findings of the current study but also provide actionable insights for educators and policymakers aiming to enhance the educational environment.

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