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# Assessing the Quality of School Facilities and Student Engagement in A Public School

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*A B S T R A C T*

This study determined the relationship between the quality of school facilities and student engagement in a public school for the school year 2024-2025. The respondents were 251 stratified randomly selected senior high school students. Data were gathered using a standardized questionnaire developed by other researchers and validated by experts. Statistical tests used were frequency, percentage, mean, standard deviation, and median as descriptive statistics, and the Mann-Whitney U test and Spearman Rho as inferential statistics. The confidence level was set at 0.05, two-tailed test. The findings of the study revealed that the quality of school facilities was "High" when taken as a whole and when they were categorized according to sex and grade level. Similarly, the level of student engagement was "High" when taken as a whole and when they were categorized according to sex and grade level. Moreover, no significant differences were noted in the quality of school facilities when they were categorized according to sex and grade level. Likewise, no significant differences were noted in the level of student engagement when they were categorized according to sex and grade level. Finally, significant relationships existed between the quality of school facilities and student engagement in public school.

Keywords: quality of school facilities, student engagement, public school, senior high school students, sex, grade level

## Introduction

School facilities encompass various elements such as buildings, grounds, parking lots, playing fields, and fixed equipment, reflecting the board's intention that local taxpayers who fund the school should be able to obtain maximum use of the facilities, to the extent consistent with the primary educational function of the school (Bergado, 2021). Facilities play an important role in creating a conducive environment for students, impacting learning outcomes and engagement. The quality and adequacy of school facilities, such as classrooms, learning materials, and supportive infrastructure, are essential for optimizing the educational process (Yangambi, 2023). Research emphasizes that well-managed facilities positively influence student motivation, engagement, and achievement (Hardiana et al., 2023). This demonstrates that facilities significantly impact the academic engagement of students (Coronado et al., 2022). Schmidt, et al., (2018) define engagement as a complex notion that describes the current state of fully engaged employees and students. Thus, the structural dimension of the concept correlates to overall involvement, encompassing cognitive, affective, and behavioral dimensions (Torsney & Symonds, 2019). Additionally, Reschly and Christenson (2022) define student engagement as the active participation of students in academic and co-curricular activities, as well as their dedication to educational objectives and learning. Interest in the construct of student engagement and its widespread acceptance as a prerequisite for productive learning has proliferated since the mid-1990s (e.g., Skinner & Pitzer, 2012; Zyngier, 2008) as cited from (Riddle et al., 2021). To provide a good learning environment, physical facilities such as buildings, tables, chairs, cupboards, and writing tools are highly needed. Schools should prioritize building and maintaining these facilities to enhance their durability. The availability of school facilities such as classrooms, desks, toilets, and adequate learning resources in different countries worldwide has been prioritized to enhance quality education (Nurabad, 2020). Overall, the relationship between school facilities and student engagement is critical to understanding how to promote an environment conducive to learning and achievement globally.

Turning to the Asian context, the concept of student engagement is a complex one that incorporates several aspects related to being actively engaged in an activity, including behavioral, cognitive, and emotional traits. Researchers in the field of educational psychology have recognized the conceptual ambiguity surrounding student engagement, which is considered a multifaceted construct. Despite this ambiguity, student engagement is widely accepted as a crucial factor in promoting desirable educational outcomes (Wong et al., 2022). In Indonesia, Santika (2021) conducted a study on the management of school facilities and infrastructure in improving education quality. He found that school facilities such as water and electricity supply, sport grounds, labs, as well as libraries, number of books, and computers significantly affect students' ability in learning activities and influence teachers' job retention. Adequate school facilities, such as libraries and technology resources, positively correlate with student engagement and learning outcomes. For instance,

research indicates that improved facilities lead to higher student motivation and achievement in vocational settings (Sojanah & Ferlinda 2019; Zakaria et al. 2020). Similarly, in China, the availability of public cultural facilities and a flourishing educational environment were found to enhance school engagement among adolescents, highlighting the importance of regional resources (Liu et al., 2021). Dedicated students put a lot of energy into their studies, which makes them successful (Bakker et al., 2015). However, buildings that are poorly maintained are associated with lower student performance and absenteeism, and ventilation improvements are vital for student health. This emphasis on obsolete or lacking school facilities that discourage positive working circumstances in general and apprenticeships in particular may be the cause of these failures (Teixeira et al., 2017). Overall, the Asian context emphasizes the importance of adequate school facilities in promoting student engagement and positive educational outcomes. Addressing the challenges posed by insufficient facilities is essential to creating a better learning environment throughout the region.

In the Philippine context, the study by Cruz (2017) examined the affective aspects of student motivation and how they affect engagement in the classroom. To create a favorable learning environment and increase affective engagement among Filipino students, the study highlighted the importance of addressing the lack of classroom facilities. Research has indicated that the learning process is hampered by insufficient school support resources, such as tables, chairs, libraries, and laboratories (Bandao, 2023). Additionally, it has been discovered that the thermal, acoustical, and lighting conditions in classrooms do not meet suggested ergonomic requirements, resulting in an undesirable learning environment (De Guzman et al., 2017). These findings emphasize the need for classrooms to be equipped with the necessary tools and conducive conditions to help children achieve academic success. Santos and Reyes (2019) investigated the relationship between students' intrinsic motivation and emotional well-being by examining the affective components of motivation in a study conducted in the Philippines. Inadequate school facilities can negatively impact this dynamic by creating an environment that hinders emotional well-being and motivation. For instance, poor classroom conditions may lead to stress or discomfort, which can diminish students' intrinsic motivation and, consequently, their engagement (Santos & Reyes, 2019). Their findings highlighted a reciprocal relationship between positive affective states and sustained motivation, which in turn affects students' affective engagement in the classroom. The Department of Education has been eager to find solutions to this persistent concern. Efforts include upgrading school facilities, such as constructing standard-sized classrooms, and gradually implementing digitalization in public institutions by providing internet connections, laptops, computers, and tablets for both teachers and learners. The department is also institutionalizing technology-based teaching strategies, such as using Smart TVs, projectors, and other gadgets. The Department of Education is continuously striving to develop world-class facilities to enhance global competitiveness (Bandao, 2023). Overall, addressing the challenges posed by insufficient classroom facilities is crucial for creating a conducive learning environment and enhancing student engagement in the Philippines.

In a local context, the quality of school facilities in Antique varies significantly across regions. Northern provinces generally have better conditions than eastern and southern areas, which are more susceptible to natural disasters and civil unrest (Figueroa et al., 2016). Schools in Antique strive to maintain high standards in their facilities, including libraries, health services, and safety measures, contributing to overall educational quality (Laureta & Dioso, 2020; Banusing & Bual, 2020). A study found that educational facilities in Pandan were mostly below standard, while implementers were competent and schools' facilities management was effective. A correlation existed between competency and effectiveness in facilities management. Challenges related to educational facilities varied, including insufficient funds and poor facility quality. An inclusive model of facilities management was proposed to address these concerns and improve the district (Antoy, 2020). This issue has long plagued the education system, with reports of overcrowded classrooms, inadequate learning materials including textbooks and essential furniture, which complicates educators' ability to deliver effective instruction and hinders learners' engagement and absorption of information (Bustamante, 2023). The implementation of the K to 12 program has further amplified these challenges, as it requires additional facilities and resources to cater to the expanded curriculum. Research indicates that the classroom environment significantly impacts student engagement, which is crucial for effective learning (Bergado, 2021). In today's education system, it is still a constant challenge to encourage students to engage in the classroom. However, recent studies have shown that there is a decrease in students' engagement, and this can lead to reduced participation in classroom activities, which could affect their learning outcomes (Ryan & Deci, 2017). This engagement is a multidisciplinary concept that includes students' thoughts, emotions, and actions, which influence their approach to assignments, emotional management, and engagement in the classroom (Ryan & Deci, 2017). Moreover, it gives teachers and policymakers insight into the declining levels of student engagement (Schunk & Meece, 2016). While these studies highlight the importance of supportive contexts, challenges such as diversity and inclusion in engagement activities remain critical issues that need addressing to ensure equitable student engagement (Cross et al., 2024). Addressing these challenges is vital for the future of education in the Philippines, as the system grapples with inadequate facilities and the need to enhance student engagement.

The availability of essential facilities and services—such as school buildings, computers, laboratories, and utilities—is vital for enhancing learning outcomes in schools worldwide (Santika, 2021). However, many developing countries experience significant disparities in access to these resources. In Asia, adequate school facilities are linked to increased student engagement and improved educational results. In the Philippines, the Institute for Development Studies (PIDS) highlights ongoing challenges in the basic education sector, emphasizing the urgent need for greater investment in school infrastructure. Firstly, previous studies have explored various aspects of the learning environment, such as classroom design and resources, but often overlook specific contributions of facilities like libraries and technology centers to student engagement levels (Lance & Kachel, 2018). Secondly, research indicates that well maintained and adequately resourced school facilities, particularly libraries, are essential for promoting student involvement and enhancing engagement (Lance, 2016). Moreover, much of the existing research has primarily focused on higher education environments, leaving K-12 public schools under-examined in this regard (Kwok et al., 2021). Therefore, there is a pressing need for targeted studies that investigate the relationship between student engagement and the quality of school facilities. Consequently, such research could provide essential knowledge for improving learning environments in public schools, especially as many studies in this area have become outdated and do not reflect current educational needs and there is a lack of local studies in Antique focusing on school facilities and student engagement. Significant gap remains in understanding the direct relationship between the quality of school facilities and student engagement in K-12 public schools. And this is the research gap the researchers would like to fill in.

Thus, this study aims to assess the relationship between the quality of school facilities and student engagement in a public school, in the areas of availability and adequacy of resources like tables, chairs, libraries, and laboratories, as well as the suitability of classroom conditions. The research will also examine the level of student engagement, in the areas of student participation, motivation, and overall satisfaction with the learning environment.

***Statement of the Problem***

The purpose of this study is to assess the quality of school facilities and its relationship with student engagement in public school for the school year 2024-2025

Specifically, it sought answers to the following questions:

1. What was the level of quality school facilities in a public school when assessed as a whole and categorized according to sex and grade level?

2. What was the level of student engagement in a public school when assessed as a whole and categorized according to sex and grade level?

3. Were there significant differences in the quality of school facilities in terms of sex and grade level?

4. Were there significant differences in student's level of engagement in terms of sex and grade level?

5. Was there a significant correlation between the quality of school facilities and student engagement in public school?

**Significance of the Study**

This study would be beneficial to the following groups of people. School administrators and policymakers can use the research findings to prioritize resource allocation for facility upgrades and improvements that will lead to better student engagement. This study can inform the development of targeted interventions and programs aimed at enhancing student engagement in schools. Teachers may gain a deeper understanding of how school facilities impact student engagement and can use this knowledge to tailor their teaching approaches accordingly. The study can provide teachers with evidence-based arguments to advocate for improvements in school facilities that directly benefit their students. This study benefits parents and guardians by empowering them to advocate for better school facilities that enhance student engagement and well-being. With data on how facility quality impacts learning, parents can make informed decisions about their children's education and collaborate more effectively with educators to improve student outcomes.

On the other hand, this research directly benefits students by identifying areas where school facilities can be improved to create a more conducive learning environment. Understanding the link between facility quality and student engagement can guide initiatives to increase student participation and motivation in the learning process. And this study can serve as a valuable framework for future research exploring the complex relationship between school facilities, student engagement, and academic achievement. The research design and methodology can be replicated and extended to different contexts, populations, and educational settings.

## Methodology

***Research Design***

This study used a descriptive correlational research design which aimed to determine the relationship between school facilities and student engagement among senior high school students in a public school.

***Respondents of the Study***

The respondents of the study were the 251 stratified randomly selected students from a total population of 672. The sample size was determined using the Slovin's formula. Stratified random sampling employing the fishbowl or lottery technique was used to draw the samples from the population. The stratified random sampling was done within the school. The names of the learners were written on a small sheet of paper, rolled, and placed into a box from which the samples were drawn. 128 or 51.00% of the respondents came from male, 123 or 49.00% of the respondent came from female. However, in terms of grade level, 117 or 46.61% of the respondents came from Grade 11, and 134 or 53.39% of the respondents came from Grade 12.

**Data Gathering Procedure**

This study made use of a questionnaire to obtain the needed data. This questionnaire was adapted from a standardized questionnaire from other researches. The questionnaire consisted of the following parts:

Part I of the questionnaire solicited data on the demographic profile of the respondents such as their sex and grade level.

Part II of the questionnaire was designed to gather data on the quality of school facilities and student engagement. The Student Engagement Questionnaire consisted of 30 and the School Facilities Questionnaire consisted of 30, five-point Likert scale items that required the respondents to answer using the following response format: 1 Strongly Disagree, 2– Disagree, 3– Neutral, 4– Agree, and 5– Strongly Agree. The score of each respondent on this part of the questionnaire was determined by adding the numerical equivalents of the options chosen, and the mean was computed.

## Data Analysis

The data generated by this research investigation were treated using the following statistical tests. Mean. This was used to determine the quality of school facilities and level of student engagement. Mann-Whitney U test. This was used to determine the differences between the quality of school facilities and level of student engagement. Spearman Rho. This was used to determine the relationship between the quality of school facilities and level of student engagement.

**Results and Discussion**

*Table1: Quality of School Facilities When Taken as Whole and Categorize according to Sex and Grade level*

| Variable | Mean | Interpretation |
|---|---|---|
| When taken as a whole | 3.46 | High |
| Sex | | |
| Male | 3.46 | High |
| Female | 3.47 | High |
| Grade Level | | |
| Grade 11 | 3.81 | High |
| Grade 12 | 3.91 | High |

*Scale of Means: 4.21-5.00 Very High; 3.41-4.20 High; 2.61-3.40 Moderate; 1.81-2.60 Low; 1.00-1.80 Very Low*

The Quality of school facilities when taken as a whole and when they were categorized according to sex and grade level was determined by computing the mean scores. When taken as a whole, the quality of school facilities is "High" with an obtained overall mean score of 3.46. A scrutiny of the means in the same table reveals that students obtained a highest mean score in the indicators “The school environment is appropriate and allows teachers to teach and students to learn to the best of their abilities.” (M=3.82), “The Registrar Office has efficient and well-organized systems for handling student records and registration processes.” (M= 3.81), and “The Guidance Office provides adequate private counseling spaces.”(M=3.71) described as "High" while they obtained the lowest mean score in the indicators “There are enough classrooms in the school.” (M=3.21), “The school has a student center where students can stay during vacant hours.” (M=3.14), and “There are enough comfort rooms in every building.”(M=3.03), described as "Moderate". This result indicates that the school's facilities are generally perceived as high quality and conducive to both teaching and learning. However, there are areas that require improvement, such as the availability of classrooms, student centers, and comfort rooms. This finding indicates that students across different sexes and grade levels are highly satisfied with their school facilities. This is consistent with the research of Santika (2021), which highlights the importance of crucial facilities and services—such as school infrastructure, computers, laboratories, and utilities—in improving educational outcomes globally. Additionally, Sojanah and Ferlinda (2019), as well as Zakaria et al. (2020), found that enhanced facilities result in greater student engagement and success, particularly in vocational environments.

In terms of sex and grade level, the quality of school facilities is “High.” Female students (M=3.47) show a slightly higher level of satisfaction with school facilities compared to male students (M=3.46). When analyzed by grade level, Grade 12 students (M=3.91) report higher satisfaction with school facilities compared to Grade 11 students (M=3.81). These findings indicate a generally high level of satisfaction with school facilities among students, with slight variations based on sex and grade level. This aligns with the findings of Limon (2016), which highlight the significance of adequate school facilities in fostering a conducive learning environment for both Grade 11 and Grade 12 students. However, it contrasts with Claveria et al. (2023) findings, which indicated lower general satisfaction with school facilities and observed differences in satisfaction based on gender, as well as between Grade 11 and Grade 12 students.

*Table 2: Level of Students' Engagement When Taken as Whole and Categorize according to Sex and Grade level*

| Variable | Mean | Interpretation |
|---|---|---|
| When taken as a whole | 3.87 | High |
| Sex | | |
| Male | 3.81 | High |
| Female | 3.90 | High |
| Grade Level | | |
| Grade 11 | 3.81 | High |
| Grade 12 | 3.91 | High |

*Scale of Means: 4.21-5.00 Very High; 3.41-4.20 High; 2.61-3.40 Moderate; 1.81-2.60 Low; 1.00-1.80 Very Low*

The level of students' engagement when taken as a whole and when they were categorized according to sex and grade level was determined by computing the mean scores. When taken as a whole, the level of students' engagement is "High" with an obtained overall mean score of 3.87. This result indicates that students in this study are highly engaged and show a strong sense of pride and happiness towards their school. They also enjoy learning new things in class, although there is room for improvement in active participation during discussions and volunteering to answer questions. This finding indicates that students across different sexes and grade levels are highly engaged in their school activities. This finding is consistent with the research of Bayar and Karaduman (2021), which shows that positive school culture influences student engagement. Additionally, Nguyen, Cannata, and Miller (2016) found that interactive teaching methods increase students' participation in class.

In terms of sex and grade level, the level of students' engagement is "High." However, female students (M=3.90) show a slightly higher level of engagement compared to male students (M=3.81). When analyzed by grade level, Grade 12 students (M=3.91) have a higher engagement level compared to Grade11students (M=3.81). This result indicates that in terms of their sex and grade level, students in this study demonstrate a high level of student engagement in their academic activities. The table suggests high overall student engagement. Overall variations between the means are not substantial enough to draw definitive conclusions about the differences.

*Table 3: Differences of Quality of School Facilities as to Sex and Grade Level*

| Variable | Demographics | Median | SD | U – test | P – Value | Rank Bi serial Correlation |
|---|---|---|---|---|---|---|
| Quality of School Facilities | Sex | | | | | |
| | Male | 3.56 | 0.485 | 7185 | 0.863 | 0.00131 |
| | Female | 3.47 | 0.516 | | | |
| | Grade Level | | | | | |
| | 11 | 3.56 | 0.489 | 7784 | 0.924 | 0.00702 |
| | 12 | 3.50 | 0.519 | | | |

*p>0.05*

As reflected in Table 3, no significant differences exist in the quality of school facilities when classified according to sex and grade level; female (Md=3.47) and male (Md=3.56) the difference is not statistically significant based on the p-value (0.863). As for the grade level; grade 11 (Md=3.56) and grade 12 (Md=3.50) the difference is not statistically significant based on the p-value (0.924). Thus, the null hypothesis which states that there are no significant differences in the quality of school facilities when classified according to sex and grade level was not rejected.

The above findings indicate that there are no significant differences in the quality of school facilities when classified according to both sex and grade level. Males had a higher median score than females; however, the difference is not statistically significant. Similarly, Grade 11 students had a higher median score than Grade 12 students, but the difference is not statistically significant. These findings suggest that sex and grade level are not significant factors influencing the perception of the quality of school facilities, and therefore do not require further investigation into underlying causes or potential interventions.

*Table 4: Differences of Level of Student Engagement as to Sex and Grade Level*

| Variable | Demographics | Median | SD | U – test | P – Value | Rank Bi serial Correlation |
|---|---|---|---|---|---|---|
| Level of Student Engagement | Sex | | | | | |
| | Male | 3.90 | 0.479 | 6291 | 0.074 | 0.136 |
| | Female | 3.94 | 0.567 | | | |
| | Grade Level | | | | | |
| | 11 | 3.89 | 0.562 | 7144 | 0.226 | 0.0887 |
| | 12 | 3.96 | 0.514 | | | |

*p>0.05*

As reflected in Table 4, no significant differences exist in the level of student engagement when classified according to sex; female (Md=3.94) and male (Md=3.90) the difference is not statistically significant based on the p-value (< 0.074). Thus, the null hypothesis which states that there are no significant

differences in the level of student engagement when classified according to sex was not rejected. However, no significant differences exist in the level of student engagement when classified according to grade level; grade 11 (Md=3.89) and grade 12 (Md=3.96) the difference is not statistically significant as the p-value (0.226) is greater than the conventional threshold (0.05). Thus, the null hypothesis which states that there are no significant differences in the level of student engagement when classified according to grade level was not rejected.

The above findings indicate that sex does not significantly influence student engagement levels, with females (Md=3.94) and males (Md=3.90) reporting similar levels, as indicated by a non-statistically significant p-value (< 0.074). In contrast, grade level does not significantly impact student engagement either, with no notable difference between grade 11 students (Md=3.89) and grade 12 students (Md=3.96), as shown by a non-statistically significant p-value (0.226). This is indicated by negligible differences in the median scores obtained by each group of respondents, as the data is not normally distributed.

*Table 5: Relationship between Quality of School Facilities and Student Engagement*

| | **Level of Student Engagement** | **Quality of School Facilities** |
|---|---|---|
| Spearman's rho | 0.480 | - |
| df | 250 | - |
| P-value | < .001 | - |

*Correlation is significant at the 0.5 alpha level*

This study finally aimed to find out the significance of the relationships between Quality of School Facilities and Level of Student Engagement and using Spearman's rho correlation. Results of Spearman's rho correlation show that there are significant relationships exist between quality of school facilities and level of student engagement ( $\rho = 0.480$ , $p = 0.001$ ) this means that as the quality of school facilities improves, student engagement also tends to improve, this relationship is very weak. The p-value of 0.001 indicates that the correlation is statistically significant. A p-value greater than 0.05 suggests that there is no significant relationship between the two variables. Thus, the null hypothesis which states that there are no significant relationships between the quality of school facilities and level of student engagement was rejected.

This finding indicates that there is a significant relationship between school facilities and student engagement ($\rho = 0.480$, $p = 0.001$). The correlation is statistically significant, meaning that the relationship observed is unlikely to be due to chance. This suggests that student engagement levels significantly predict the quality of school facilities in this study. This affirms the findings of Wibowo (2020), who found that improved school facilities positively impact student engagement. Additionally, Maxwell (2020) revealed a significant positive correlation between the quality of school facilities and student academic performance.

## CONCLUSION

Result shows that the quality of school facilities in this study is high, regardless of sex and grade level. This indicates that students have access to well-maintained buildings updated technology, adequate resources, and safe learning environment that provides focus and overall well-being, leading to better academic performance of the students. Student engagement levels are high overall, with no significant differences across sexes and grade levels. This suggests that students are actively participating and involved in their educational experiences, regardless of their demographic categories.

The quality of school facilities does not significantly differ when categorized by sex and grade level. This implies that sex and grade level are all independent factors and have nothing to do with the quality of school facilities. Student engagement levels do not significantly differ based on sex and grade level. This means that engagement remains consistent across various student demographics. A significant relationship exists between the quality of school facilities and student engagement in public schools. This indicates that the better the school facilities, the higher the levels of student engagement.

## RECCOMENDATIONS

Based on the findings and conclusions, these recommendations are presented by the researchers:

1. DepEd and school administrators must prioritize funding for facility upgrades and improvements, especially classrooms, student centers, and comfort rooms. They must invest in infrastructure upgrades to enhance access to educational resources. Lastly, they must focus on providing professional development opportunities for teachers, emphasizing new teaching methods like interactive and technology-based approaches.
2. Teachers must use interactive teaching methods to engage students and motivate them to participate. They must also advocate for better school facilities, highlighting the positive impact on learning. Finally, they must create a supportive and inclusive classroom environment that encourages student participation and academic growth.
3. Parents and guardians must actively participate in school governance, advocate for better facilities, and provide a supportive home learning environment while encouraging their children's involvement in school activities. They must also work with teachers to identify ways to support student engagement.

4. Students must actively participate in classroom activities, seek support when needed, make the most of available resources, and communicate their needs and concerns to teachers and administrators to improve the learning environment. They must also take ownership of their learning and proactively seek out opportunities to learn and grow.

5. Future researchers must conduct studies in diverse local contexts to understand the relationship between school facilities and student engagement. They must replicate and extend existing research to different contexts, populations, and educational settings to gain a more comprehensive understanding of this critical topic.

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