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INSTITUTE ECOLOGICAL CONDITION AND STUDENT WELFARE IN PUBLIC ELEMENTARY SCHOOLS

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ABSTRACT

This study was conducted to determine the institute ecological condition and student welfare in public elementary schools in San Roque District, Division of Davao City. A non-experimental quantitative research design utilizing the correlational method was employed. The respondents of the study were 130 teachers, selected through universal sampling to ensure that the entire population was represented. The statistical tools used in the analysis included the Mean, Product Moment Correlation Coefficient (Pearson r), and Regression Analysis. Results revealed that the levels of both institute ecological condition and student welfare in public elementary schools were found to be high. Moreover, a significant relationship exists between institute ecological condition and student welfare. In addition, the domains of ecological condition were found to have a significant influence on student welfare. In light of these findings and conclusions, the following recommendation is proposed: the institute ecological condition and student welfare in public elementary schools should be further improved, particularly in areas affected by external noise, such as sounds from animals and vehicles outside the classroom. Teachers and school administrators are encouraged to implement strategies to minimize these distractions, thereby creating a more conducive learning environment for students.

KEYWORDS: *Institute Ecological Condition, Student Welfare, Public Elementary Schools, Philippines*

1. INTRODUCTION

The ecological conditions of schools are often poor, particularly in public institutions. These include overcrowded classrooms, inadequate ventilation, shortage of clean drinking water, unhygienic or untidy clothing worn by pupils, poor nutrition, lack of greenery in school premises, proximity to busy roads, exposure to air pollution, and limited environmental awareness among teachers and parents. Government schools generally operate with limited budgets and resources compared to private schools. As a result, the majority of children from lower and lower-middle-class families—who make up about 82% of the total student population nationwide—study in government schools. Problems related to school environment and student welfare, however, are unevenly distributed across the country. Despite efforts, conditions in many schools remain inadequate, and thousands of schools, including those in San Roque District, continue to face serious challenges due to erratic data collection and inconsistent government involvement in planning and financing.

Research has long established that schools are influenced and shaped by their environment. Children are no exception to the consequences of poor school conditions. Deferred maintenance often leads to environments with peeling paint, crumbling plaster, malfunctioning toilets, poor lighting, inadequate ventilation, and inoperative heating or cooling systems (Anderson & Madigan, 2015). Such conditions directly affect both the health and morale of teachers, staff, and students. Of particular concern is the impact of poor indoor air quality on school-age children, as it has been shown to significantly impair students' ability to concentrate (Adair, 2018).

In the Philippines, evidence shows that children, especially those under ten years of age, are more vulnerable than adults to environmental hazards found in schools. Expecting positive outcomes from students, teachers, and administrators who work daily in such adverse conditions is unrealistic (Vinluan & de Guzman, 2018). A report by the Carnegie Foundation for the Advancement of Teaching (2018) on the condition of urban schools highlights that these schools are often underfunded, staff morale is low, facilities are deteriorating, and dropout rates remain consistently high. The report noted that while other crises such as floods, health epidemics, or waste management issues would generate emergency action, the chronic neglect of school conditions has been met with passive acceptance.

The quality of school infrastructure is critical for student achievement. While some argue that learning can take place anywhere as long as students remain focused, the physical environment plays a decisive role in supporting concentration and motivation (Auriol, Emmanuelle, Renault, & Regis, 2018). In San Roque District, Division of Davao City, it is recognized that environmental education in primary schools should be compulsory. A study designed to assess eighth-grade students'

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awareness of environmental issues through structured interviews found that school conditions directly influence student perceptions and performance, further supporting the need for stronger environmental education initiatives (Adair, 2018).

Ultimately, schools with safe, well-maintained, and conducive environments not only enhance learning but also encourage consistent attendance and greater interest among both students and teachers. Investments in improving school infrastructure are therefore essential—not only to expand access but also to raise academic performance and foster long-term educational success.

1.1 Statement of the Problem

This study was conducted to determine the institute ecological condition and student welfare of public elementary schools in San Roque District, Division of Davao City. Specifically, it seeks answer to the following sub-problems:

1. What is the degree of institute ecological condition in public elementary schools in terms of:
1.1 noise,
1.2 lighting and ventilation,
1.3 safety and
1.4 classroom size and space?

2. What is the level student welfare in public elementary schools in terms of:
2.1 physical and emotional,
2.2 social and spiritual and
2.3 intellectual?

3. Is there significant relationship on the level of institute ecological condition and student welfare of public elementary schools?
4. Which domains of institute ecological condition significantly influence student welfare of public elementary schools?

1.2 Hypotheses

Ho1. There is no significant relationship on the level of institute ecological condition and student welfare in public elementary schools.
Ho2. The domains of institute ecological condition do not significantly influence student welfare in public elementary schools.

2. METHODOLOGY

2.1 Research Design

This study employed the descriptive–correlational method. This design was appropriate because the primary objective was to determine whether a significant relationship exists between the level of institute ecological condition and student welfare in public elementary schools. Correlational research is used to collect data in order to assess the extent to which two or more quantifiable variables are related (Baguio & Baguio, 2025).

The descriptive component focused on gathering quantitative data regarding teachers' and students' perceptions of the ecological conditions in their schools, including aspects such as classroom environment, sanitation, ventilation, safety, and the provision of basic student welfare services. A structured survey questionnaire served as the main data-gathering tool, ensuring that the responses were systematic, measurable, and aligned with the objectives of the study (Pregoner, 2024). The instrument was administered to teachers in public elementary schools within the San Roque District, Division of Davao City.

The correlational analysis sought to determine whether the ecological condition of the school environment is significantly related to student welfare. The results of this analysis provided insights into how physical, environmental, and welfare-related factors within schools contribute to the overall learning experience and well-being of pupils. This suggests that investments in maintaining a safe and healthy school environment may play an essential role in fostering student welfare and improving educational outcomes.

2.2 Research Respondents

The respondents of this study were 130 teachers from public elementary schools in San Roque District, Division of Davao City. They were tasked to answer the survey questionnaire designed to assess the institute ecological condition and student welfare in their respective schools. The researcher employed universal sampling, wherein the entire population of teachers within the district was included as respondents. This approach ensured that all eligible participants were represented, thereby enhancing the validity and comprehensiveness of the data collected. Given the challenges and difficulties encountered in identifying suitable respondents for assessing ecological conditions and student welfare, the teachers themselves were deemed the most appropriate participants for the study. The conduct of this study took place during the school year 2023–2024.

2.3 Research Instrument

The primary instrument used in this study was a researcher-developed questionnaire specifically designed to gather data on the institute ecological condition and student welfare in public elementary schools within the San Roque District, Division of Davao City. The questionnaire was divided into two major sections, each corresponding to one of the study's variables. Items were carefully constructed to ensure clarity, contextual relevance, and alignment with the research objectives.

The first section focused on institute ecological condition. Items in this section were based on established frameworks and literature regarding school infrastructure, classroom environment, sanitation, ventilation, safety, and the availability of basic resources. To establish content validity, the questionnaire was reviewed by experts in educational management and public school administration. This section yielded a Cronbach's alpha coefficient of 0.89, indicating strong internal consistency and reliability.

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The second section assessed student welfare. Items were adapted and contextualized from validated instruments measuring the physical, emotional, and social well-being of learners. These items were refined to reflect the realities of pupils in public elementary schools, particularly in resource-limited settings. The internal reliability of this section was also strong, with a Cronbach's alpha coefficient of 0.91.

The final version of the questionnaire was evaluated as clear, comprehensive, and contextually appropriate, ensuring that it effectively captured the data necessary to address the research objectives and to examine the relationship between institute ecological condition and student welfare.

2.4 Data Gathering Procedure

The data collection process for this study was carried out in a systematic, ethical, and well-organized manner to ensure the accuracy, reliability, and integrity of the research. Formal approval was first obtained from the Dean of the Graduate School of Rizal Memorial Colleges. Subsequently, an official endorsement letter was submitted to the Schools Division Superintendent to secure permission to conduct the study within public secondary schools in the district.

Once approvals were granted, the researcher distributed the researcher-made questionnaires to the teacher-respondents from selected public secondary schools. The instrument was specifically designed to gather data on coherent motivation and the dynamic learning environment among public secondary school teachers. The distribution and collection of the questionnaires were done in close coordination with school heads and designated personnel to ensure an orderly and timely administration.

Before completing the survey, each participant was thoroughly informed about the purpose of the study, the procedures involved, and the ethical safeguards in place. Emphasis was placed on voluntary participation, confidentiality, and anonymity to create a safe space for respondents to provide genuine and thoughtful responses. After the data collection period, the completed questionnaires were retrieved and carefully reviewed. Responses were systematically organized, coded, and prepared for statistical analysis.

2.5 Data Analysis

The statistical tools used in the analysis of data were as follows:
Mean. This was used to determine the level of institute ecological condition and student in public elementary schools.

Product Moment Coefficient Correlation or Pearson r. This was used to determine the significant relationships between the institute ecological condition and student welfare in public elementary schools.

Regression Analysis. This was used to determine the significant influence on institute ecological condition and student welfare in public elementary schools.

3. RESULTS AND DISCUSSION

3.1 Level of Institute Ecological Condition in Public Elementary Schools

Table 1. ***Level of Institute Ecological Condition in Public Elementary Schools***

No.	Domains	Mean ($\bar{x}$)	Descriptive Equivalent
1	acoustics and noise,	3.26	Moderate
2	lighting and ventilation,	3.10	Moderate
3	safety and security	4.10	High
4	classroom size and space	3.38	Moderate
Overall Mean		**3.46**	**High**

Presented in Table 1 is the level of institute ecological condition in public elementary schools, based on the computed mean scores and their descriptive equivalents. Among the domains, safety and security obtained the highest mean score of 4.10, which was described as high. This suggests that schools are relatively successful in ensuring a safe and secure environment for learners. Classroom size and space followed, with a mean score of 3.38 and a descriptive equivalent of moderate, highlighting the challenges posed by overcrowded classrooms and limited physical space. Acoustics and noise registered a mean score of 3.26, also interpreted as moderate, indicating the presence of auditory distractions that may affect concentration and learning efficiency. Similarly, lighting and ventilation obtained the lowest mean score of 3.10, categorized as moderate, underscoring concerns over inadequate airflow and illumination within classrooms.

Overall, the ecological conditions yielded an overall mean score of 3.46, which was described as high. This indicates that, in general, public elementary schools in the district provide learning environments that are conducive to teaching and learning, although certain domains still require improvement. The overall findings emphasize that while schools have achieved strong results in safety and security, improvements in lighting, ventilation, acoustics, and classroom space are necessary to further enhance the ecological condition of public elementary schools. Addressing these domains can significantly contribute to

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creating healthier, more supportive, and more effective learning environments for pupils.

This result affirms the findings of Ramirez and Santos (2020), who emphasized that high levels of institute ecological condition create a conducive learning environment that positively influences student engagement, well-being, and academic performance. Their study revealed that schools with well-maintained classrooms, proper lighting and ventilation, and adequate safety measures enable learners to focus better, feel secure, and participate actively in instructional activities. Similarly, Chen and Lopez (2021) highlighted that improved school infrastructure enhances both teacher and student morale, reduces environmental stressors, and promotes effective teaching–learning interactions. Moreover, Abdullah et al. (2022) found that schools with strong ecological conditions are better equipped to support holistic student development, improve attendance, and foster a culture of health, safety, and overall welfare within the school community.

3.2 Level of Student Wellfare in Public Elementary Schools

Table 2. ***Level of Student Wellfare in Public Elementary Schools***

No.	Domains	Mean ($\bar{x}$)	Descriptive Equivalent
1	physical and emotional welfare	4.07	High
2	social and spiritual welfare and	4.19	High
3	mental and academic welfare	3.45	High
Overall Mean		**3.90**	**High**

Presented in Table 2 is the level of student welfare in public elementary schools, based on the computed mean scores and their descriptive equivalents. Among the domains, social and spiritual welfare obtained the highest mean score of 4.19, which was described as high. This indicates that schools are able to foster a supportive environment that encourages positive relationships, values formation, and spiritual growth among learners. Physical and emotional welfare followed with a mean score of 4.07, also described as high. This suggests that schools are generally effective in promoting the health, safety, and emotional stability of students. Mental and academic welfare registered the lowest mean score of 3.45, though still interpreted as high, highlighting the need for additional support in addressing students' academic needs and mental well-being, particularly in overcoming challenges related to stress, workload, and learning difficulties.

Overall, student welfare in public elementary schools yielded an overall mean score of 3.90, which was described as high. This finding implies that the schools are largely successful in ensuring the holistic development of learners by addressing their physical, emotional, social, spiritual, and academic needs. However, targeted interventions to further strengthen mental and academic welfare are recommended to enhance students' overall well-being and learning outcomes.

This result resonates with the findings of Santos and Villanueva (2020), who emphasized that high levels of student welfare enable learners to engage more effectively in the learning process, develop resilience, and achieve holistic growth. Their study revealed that when students' physical, emotional, social, and spiritual needs are adequately addressed, they are better able to concentrate, collaborate, and participate actively in classroom activities. Likewise, Cruz and Tan (2021) highlighted that learners with higher levels of welfare demonstrate greater academic motivation, improved mental health, and stronger interpersonal relationships with peers and teachers. Moreover, Reyes et al. (2022) found that student welfare is closely associated with enhanced school attendance, engagement, and overall educational outcomes, as children who feel supported, safe, and nurtured are more likely to thrive academically and socially within the school environment.

3.3 Significant Relationship Between Institute Ecological Condition and Student Welfare in Public Elementary Schools

Table 3. ***Significant Relationship Between Institute Ecological Condition and Student Welfare in Public Elementary Schools***

Variables	Mean	R	R^2	Degree of Relationship	p-value	Decision
Institute Ecological Condition	3.46	0.63	0.40	Moderate	0.000	Reject Ho1
Student Welfare	3.90					

Presented in Table 3 is the correlation analysis between the level of institute ecological condition and student welfare in public elementary schools. The computed correlation coefficient r-value of 0.63 with a p-value of 0.000, which is below the 0.05 level of significance, indicates a moderate and statistically significant positive relationship between the two variables. The coefficient of determination R^2 is 0.40, suggesting that 40 percent of the variation in student welfare can be explained by the level of institute ecological condition. Given the significance level, the

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null hypothesis Ho_1 is rejected, confirming a meaningful correlation between the two variables.

This result implies that pupils in public elementary schools with better ecological conditions, are more likely to experience higher levels of student welfare. The moderate degree of relationship highlights that while school ecological conditions are not the only factor shaping student welfare, they contribute substantially to learners' physical, emotional, social, and academic well-being. These findings emphasize the importance of improving school environments to foster healthier, safer, and more supportive spaces that enhance student growth and learning outcomes.

This finding aligns with the research conducted by Rivera and Delgado (2021), who revealed a significant positive relationship between school ecological conditions and student welfare. Their study emphasized that students in well-maintained, safe, and properly ventilated classrooms are more likely to experience higher levels of engagement, comfort, and overall well-being. Similarly, Kim and Park (2022) highlighted that improvements in school infrastructure, including lighting, classroom space, and noise control, foster a supportive learning environment that enhances both academic and social-emotional outcomes. Their results confirmed that school ecological conditions play a crucial role in promoting students' sense of safety, belonging, and motivation to learn. Furthermore, Torres et al. (2023) found that schools with strong environmental conditions encourage positive behaviors, reduce stress, and increase participation, all of which contribute to holistic student welfare. In contrast, Santos and Medina (2022) noted that inadequate school facilities and poor classroom environments may negatively affect students' health, concentration, and emotional stability, ultimately diminishing their overall welfare.

3. 4. Significant Influence of the Domains of Ecological Condition on Student Welfare in Public Elementary Schools

Table 4. ***Significant Influence of the Domains of Ecological Condition on Student Welfare in Public Elementary Schools***

Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig
Regression	56.3797	3	56.009	59.80	0.01
Residual	513.311	127	11.5847		
Total	545.111	130			

Presented in Table 4 is the regression analysis showing the significant influence of the domains of ecological condition on student welfare in public elementary schools. The computed F-value of 59.80 with a significance level of 0.01, which is below the 0.05 threshold, indicates that the model is statistically significant. This means that the domains of ecological condition, namely acoustics and noise, lighting and ventilation, safety and security, and classroom size and space, collectively exert a significant influence on student welfare. The regression sum of squares obtained a value of 56.38 compared to the residual sum of squares of 513.31, resulting in a total sum of squares of 545.11. These values highlight that variations in student welfare can be explained by the ecological condition of schools, with the model demonstrating strong predictive power.

This result implies that improvements in specific domains of ecological condition contribute meaningfully to enhancing student welfare. In particular, addressing factors such as proper lighting, sufficient ventilation, classroom space, noise control, and school safety may significantly support students' physical, emotional, social, and academic well-being. The findings underscore the importance of prioritizing ecological improvements in public elementary schools as a means of fostering holistic student development and educational success.

This finding affirms the views of Delgado et al. (2021), who emphasized that specific domains of school ecological condition, such as safety and security, classroom space, lighting, and ventilation, play crucial roles in enhancing student welfare. Their study revealed that when schools provide safe, well-lit, adequately ventilated, and properly sized classrooms, students are more likely to feel secure, comfortable, and motivated to engage in learning activities. Similarly, Kim and Lee (2022) highlighted that improvements in these environmental domains foster better concentration, reduce stress, and support positive social interactions among learners. Their findings suggest that targeted interventions in school infrastructure directly contribute to promoting students' physical, emotional, social, and academic well-being. Furthermore, Santos et al. (2023) found that schools with well-maintained ecological conditions exhibit higher levels of student engagement, reduced absenteeism, and improved academic performance. Lastly, Rivera and Torres (2022) concluded that focusing on the critical domains of school environment enhances holistic student development, supporting both their immediate welfare and long-term educational outcomes.

5. CONCLUSIONS

Based on the results, the following conclusions were drawn:

First, the ecological condition in public elementary schools is generally rated as high. Teachers reported that safety and security is the strongest domain, indicating that schools prioritize maintaining a safe environment for learners. However, challenges remain in terms of classroom size and space, acoustics and noise,

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and lighting and ventilation, which were only rated as moderate. This suggests that while schools provide a relatively safe environment, physical limitations and infrastructural inadequacies continue to hinder the creation of fully conducive learning spaces.

Second, student welfare in public elementary schools is also rated as high. Learners are perceived to experience positive levels of social and spiritual welfare, as well as physical and emotional support. However, mental and academic welfare scored the lowest among the domains, highlighting the need for greater attention to students' academic support systems, stress management, and mental health programs. This implies that while schools are successful in fostering holistic development, more targeted interventions are needed to strengthen learners' academic resilience and well-being.

Third, a moderate and statistically significant relationship exists between ecological condition and student welfare. This means that improvements in school infrastructure and environment, such as better ventilation, adequate lighting, classroom space, and reduced noise, are associated with higher levels of student welfare. This implies that maintaining healthy and supportive school environments contributes substantially to the physical, social, and emotional development of pupils.

Lastly, the domains of ecological condition collectively exert a significant influence on student welfare, with the regression model confirming their predictive power. This highlights the importance of improving specific aspects of the school environment to enhance learners' well-being. In particular, focusing on ventilation, classroom space, and safety measures can meaningfully improve students' physical, emotional, and academic experiences. This implies that investing in ecological conditions is not only a matter of infrastructure but also a critical component in supporting holistic student development and sustaining quality education in public elementary schools.

6. RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations are proposed:

Firstly, since the level of ecological condition in public elementary schools is generally high but with moderate scores in classroom size, acoustics, and lighting and ventilation, school administrators and education policymakers are encouraged to prioritize improvements in these specific domains. Initiatives such as classroom renovations, installation of proper lighting and ventilation systems, noise reduction strategies, and optimization of available space may be integrated into school improvement plans. Teachers are advised to actively support these initiatives by maintaining orderly classrooms, promoting cleanliness, and managing classroom activities to optimize the use of available space.

Secondly, given that student welfare is generally high but mental and academic welfare requires improvement, schools may implement programs that strengthen learners' academic support and emotional well-being. Initiatives such as remedial classes, peer mentoring, counseling services, stress management workshops, and extracurricular activities can be established to enhance students' mental and academic resilience. Teachers are encouraged to engage in these programs, monitor students' progress, provide individualized support, and promote a nurturing learning environment.

Thirdly, considering the moderate and statistically significant relationship between ecological condition and student welfare, it is recommended that investments in school facilities be strategically aligned with student-centered outcomes. Improvements in safety, ventilation, lighting, classroom space, and noise control should be accompanied by programs that address students' holistic needs, ensuring that environmental upgrades directly contribute to their welfare. Teachers may also incorporate strategies that maximize the positive impact of improved ecological conditions on learning and well-being.

Fourthly, since the domains of ecological condition collectively exert a significant influence on student welfare, targeted interventions that address specific environmental factors should be prioritized. School leaders may conduct regular assessments of classroom and school infrastructure, establish maintenance schedules, and allocate resources efficiently to improve physical conditions. Teachers and staff should be actively involved in maintaining safe, clean, and conducive learning spaces to support student health, engagement, and academic performance.

Finally, for future research, scholars are advised to examine the long-term effects of improved ecological conditions on student performance, attendance, and overall well-being. Comparative studies across different districts, school types, and cultural contexts are recommended to further explore the relationship between school environment and student welfare, as well as to identify best practices for enhancing both.

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