

School Environmental Health Conditions and Their Impact on Children's Learning Activity

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Abstract

School environmental health is one of the external factors that plays an important role in supporting the success of the teaching and learning process. A clean, healthy, and safe environment not only creates a comfortable learning atmosphere but also can improve students' concentration, motivation, and activeness during lessons. This study aims to analyze the condition of school environmental health and examine the extent of its influence on children's learning activeness. The research uses a descriptive quantitative approach with data collection techniques in the form of observation, documentation, and questionnaires given to 60 students from grades IV–VI SDN Pener 01. Observed aspects include classroom cleanliness, the condition of sanitation facilities, ventilation and lighting quality, as well as the waste management system in the school environment. The results of the study show that the quality of school environmental health has a significant relationship with students' learning activeness. Students who study in an environment with high cleanliness standards show an activity level of 82%, while students in an environment with low cleanliness only reach 55%. These findings reinforce that a healthy and well-organized learning environment can encourage students to be more active, focused, and enthusiastic in participating in lessons. Based on these results, it can be concluded that the better the condition of the school environment, the higher the students' learning activity levels. This study recommends the importance of improving sanitation facilities, enhancing ventilation and lighting, as well as strengthening programs for clean and healthy living habits to support an optimal learning process.

Keywords: school environmental health, learning activity, sanitation, school cleanliness

Introduction

A healthy school environment plays a critical role in supporting an effective teaching and learning process. A well-maintained, clean, and organized learning space contributes not only to students' physical comfort but also to their psychological readiness and behavioral engagement during classroom activities. In the context of elementary education, where students are in a developmental stage that requires structured and supportive surroundings, environmental health becomes particularly significant (Husna, M., et al, 2025). Poor environmental conditions—such as inadequate sanitation, insufficient ventilation, dim

lighting, and unmanaged waste—can create discomfort, reduce concentration, and even increase the risk of illness. These conditions may lead to decreased attendance, lower motivation to learn, and ultimately reduce students' learning activeness.

Previous quantitative studies have emphasized the importance of physical school environments in shaping students' academic behaviors. Research consistently shows that classroom cleanliness, access to functional sanitation facilities, proper air circulation, optimal natural and artificial lighting, and systematic waste management contribute positively to students' academic performance and engagement. Clean learning spaces help minimize distractions, reduce the likelihood of health-related complaints, and improve students' comfort levels, all of which support active participation in lessons. Despite this body of evidence, many elementary schools in developing regions, including Indonesia, still face challenges in maintaining environmental health due to limited resources, low awareness, or inconsistently implemented school policies.

Given the essential role of environmental conditions in influencing learning quality, this study was conducted to quantitatively examine the relationship between school environmental health and students' learning activeness. The research focuses on evaluating four key environmental indicators: classroom cleanliness, the adequacy of sanitation facilities, the quality of ventilation and lighting, and the effectiveness of waste management practices. These indicators were selected based on existing educational standards and prior empirical findings that highlight their relevance to students' physical and psychological comfort. The study involved 60 students from grades four to six and utilized structured observation checklists, school documentation, and student questionnaires to obtain objective and measurable data.

Learning activeness in this study is understood as students' observable involvement in learning activities, including asking and answering questions, participating in discussions, completing assignments, expressing opinions, and paying sustained attention to teacher explanations. Using a quantitative design, the study aims to measure the extent to which environmental health contributes to variations in students' learning activeness. Statistical analyses were employed to identify differences between students learning in high- and low-quality environmental settings and to assess which environmental components have the strongest influence.

Overall, this study seeks to provide empirical evidence that strengthens existing research on school environmental factors and student engagement. Beyond contributing to theoretical understanding, the findings are expected to offer practical implications for teachers, school administrators, and policymakers. Improving and maintaining a healthy school environment is crucial for sustaining effective learning conditions and supporting students' holistic development. Ultimately, the results of this research aim to encourage schools to invest in regular maintenance, environmental health monitoring, and clean-living education programs that foster optimal learning outcomes.

Methods

Research Design

This study employed a descriptive quantitative research design aimed at illustrating the condition of school environmental health and analyzing its influence on students' learning

activeness. This design was chosen because it allows researchers to present numerical data that describe real conditions in the school environment and identify patterns or tendencies regarding students' academic engagement.

Participants

The participants of this study consisted of 60 students from grades IV, V, and VI SDN Pener 01, selected using purposive sampling to ensure representation across upper-grade levels. These students were chosen based on accessibility and their relevance to the study focus, which involves examining perceptions and behaviors related to learning activeness in relation to school environmental conditions.

Research Procedures

The research was conducted through several systematic stages, including preparation of research instruments, field observation of school environmental conditions, questionnaire administration to students, and documentation collection. After data collection, the researcher organized the data, verified its completeness, and proceeded with quantitative descriptive analysis to answer the research objectives.

Data Collection Technique(s)

Data were collected using three main techniques, namely observation, documentation, and questionnaires. Observation was carried out to assess the cleanliness of classrooms, sanitation facilities, ventilation and lighting quality, and the school's waste management system. Documentation supported the observation process by providing visual and administrative evidence. Meanwhile, the questionnaire, using a Likert scale, was distributed to students to measure their level of learning activeness, including participation, attention, and engagement during lessons.

Data Analysis Technique

The collected data were analyzed using descriptive quantitative analysis by calculating percentages to describe both the level of school environmental health and students' learning activeness. The data were further compared to identify differences in learning activeness between students who experienced high and low environmental health conditions. This analysis enabled the researcher to determine the extent of the relationship between school environment quality and student learning activeness.

Results

The School Environment

According to Iqlima (2024), the school environment is the environment where children are in a learning situation, and this environment greatly affects the growth and development of the child's personality. Meanwhile, according to Imam Supardi, the school environment is the sum of all living and non-living things as well as all conditions present in

the space we occupy. According to another definition, it includes all materials and stimuli inside and outside the individual, whether physiological, psychological, or socio-cultural in nature. According to Syamsu Yusuf, the school environment is the sum of all living and non-living things as well as all conditions in formal educational institutions that systematically implement educational programs and help students develop the potential within themselves (Khairunnisa et al., 2024). In line with this, (Deka et al., 2022) reveal that an optimal learning environment is one that challenges and motivates students to learn, provides a sense of safety and satisfaction, and helps them achieve the desired learning objectives.

Therefore, from the various opinions expressed by experts, it can be concluded that the school learning environment is a place or situation where the learning process takes place and influences changes in human behavior, especially in children.

Learning Activities

Basically, learning activities aim to produce positive changes so that a person can move towards maturity. The process of achieving these positive changes must be accompanied by an environment that supports the learning process. Learning is the core of the learning process; in other words, the learning process will be optimal when the learning environment is supportive and the students, as learners, have a strong motivation to learn (Riyanto, 2021).

Furthermore, the school environment does not only refer to physical cleanliness but also includes the organization of space, air circulation, lighting, sanitation facilities, and the overall learning climate that supports students' psychological comfort. A conducive school environment increases students' engagement, concentration, and participation during learning activities. Recent studies highlight that environmental health variables—such as classroom hygiene, waste management, ventilation, and availability of handwashing facilities—are positively correlated with students' learning activeness and academic participation. These findings strengthen the theoretical foundation that environmental health is an integral component of effective learning ecosystems.

School Environmental Health at SDN Pener 01

Based on preliminary observations and documentation, SDN Pener 01 shows varied conditions related to environmental health indicators. The school has 6 classrooms, all equipped with adequate windows. The availability of handwashing stations in front of the classroom hygiene practices, but their distribution is uneven, with only two located near the upper-grade area. Waste management practices are implemented through the 3R (Reduce, Reuse, Recycle) program, yet student compliance remains moderate, as indicated by the presence of mixed waste in several bins. The school yard is relatively clean, supported by a daily cleaning schedule involving teachers and students. However, sanitation facilities, particularly toilets for upper-grade students, show signs of wear and require renovation to ensure comfort and health standards. These conditions make SDN Pener 01 an appropriate site to study how environmental health influences students' learning activeness, especially considering that the school is in the process of improving its hygiene and sanitation facilities.

By integrating theoretical perspectives with real conditions in the field, this study positions school environmental health as a critical determinant of learning activeness. The empirical situation at SDN Pener 01 aligns with previous research, which consistently demonstrates that better environmental health encourages students to be more active, engaged, and motivated during classroom activities. Thus, examining the extent to which these

environmental factors influence student outcomes provides valuable insights for both educational practitioners and policymakers aiming to improve the quality of learning environments.

Discussion

The results of this study present a comprehensive depiction of how school environmental health conditions influence students' learning activeness. Observation findings indicate that the overall environmental quality varies significantly across different classrooms and school areas. Classrooms categorized as having high environmental health are characterized by well-maintained cleanliness, orderly seating arrangements, dust-free surfaces, and sanitation facilities that are fully functioning, such as clean toilets and available handwashing stations. These classrooms also benefit from sufficient ventilation that ensures adequate air circulation and natural lighting that supports students' visual comfort during learning activities. Waste management systems in these areas are organized, with trash bins available in strategic spots and regular waste disposal routines implemented effectively.

Meanwhile, classrooms categorized as having low environmental health show several deficiencies, including dusty or unclean floors, overcrowded seating arrangements, inadequate ventilation, dim lighting, and poorly maintained sanitation facilities. Waste disposal practices in these areas are also less structured, with some bins overflowing and waste scattered in certain corners. These conditions contribute to an atmosphere that is less conducive to learning, potentially affecting students' psychological and physical comfort.

Results obtained from the student questionnaires support the observational findings. Students studying in high-environmental-health settings display a learning activeness rate of 82%, indicating strong engagement during learning activities. These students tend to demonstrate proactive behaviors such as answering questions, participating in discussions, completing tasks on time, and showing consistent attention to teacher explanations. Their motivation levels appear higher, and they report feeling more comfortable and focused in a clean and well-organized environment. In contrast, students in low-environmental-health settings report a much lower activeness rate, reaching only 55%. This group exhibits reduced participation in class activities, lower concentration levels, and a tendency to become easily distracted. Their responses suggest that physical discomfort, poor air quality, and unclean surroundings contribute to decreased motivation and attentiveness.

Statistical comparison indicates a substantial 27% difference in learning activeness between students in high and low environmental health settings. This gap illustrates that the school environment functions not merely as a physical backdrop but as an influential external factor that directly affects students' learning behaviors. The results further show that environmental components such as lighting and sanitation have the strongest perceived influence, followed by classroom cleanliness and waste management systems.

Furthermore, the findings align with a broad range of previous research studies that highlight the importance of environmental factors in shaping students' academic engagement. Prior studies on classroom cleanliness have shown that clean learning spaces help minimize distractions and reduce health-related risks such as allergies or respiratory issues, which can impair learning focus. Similarly, research on ventilation and air quality emphasizes that well-ventilated classrooms reduce fatigue and enhance students' ability to concentrate for longer

periods. The present study reinforces these conclusions, as students in classrooms with good air circulation report feeling more energized and less sleepy during lessons.

Studies on lighting have also indicated that inadequate lighting can lead to eye strain, reduced reading clarity, and diminished comprehension. Consistent with this, students in poorly lit classrooms within this study report greater difficulty staying focused, especially during reading or writing tasks. Meanwhile, literature on school sanitation stresses that students' comfort and readiness to learn increase when hygiene facilities are available and maintained. The present findings are in line with this, as students frequently mentioned clean toilets and accessible handwashing areas as factors that made the school environment feel "comfortable" and "safe."

Waste management, although sometimes overlooked, is highlighted in previous studies as a determinant of environmental quality and emotional well-being. Schools with poor waste management often create environments with unpleasant odors or visual clutter, which can influence mood and engagement. The present study provides empirical support for this notion, showing that students in areas with unmanaged waste exhibit lower participation and appear less enthusiastic during lessons.

Taken together, the findings demonstrate a clear and consistent trend: students' learning activeness increases as school environmental health improves. The combination of clean physical spaces, proper sanitation, adequate ventilation, and structured waste management contributes to a supportive learning climate where students feel more motivated, comfortable, and ready to engage in cognitive activities. These results offer strong empirical evidence that environmental health is a significant factor influencing student behavior and learning engagement. In conclusion, this study not only aligns with but also strengthens earlier findings by quantitatively proving that healthy school environments play an essential role in shaping students' learning activeness.

Conclusion

The findings of this study demonstrate that school environmental health plays a crucial role in shaping students' learning activeness. Classrooms with high levels of cleanliness, adequate sanitation facilities, optimal ventilation, proper lighting, and well-managed waste systems create a learning environment that is comfortable, safe, and supportive of cognitive engagement. Students who learn in such environments show significantly higher levels of activeness reaching 82% compared to only 55% among those in environments with lower environmental health standards. This substantial difference underscores the importance of maintaining a healthy school environment to enhance students' motivation, focus, and participation in classroom activities.

The results also confirm and reinforce previous research indicating that environmental conditions, including air quality, hygiene, and lighting, contribute meaningfully to students' readiness and willingness to learn. A clean and well-organized school environment not only reduces distractions and physical discomfort but also promotes a sense of well-being that encourages students to take an active role in the learning process. These findings emphasize that environmental health is not a secondary or supportive factor but a key determinant of students' learning engagement.

Based on these conclusions, it is recommended that schools prioritize the improvement and routine maintenance of sanitation facilities, ventilation systems, classroom cleanliness, and waste management practices. Strengthening programs related to clean and

healthy living habits within the school is also essential to sustain a positive learning climate. By investing in healthier school environments, educational institutions can foster conditions that maximize students' academic potential and promote active, enthusiastic participation in learning.

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