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Environmental Attitudes of Junior High School Students in Relation to the Implementation of the GPBLHS Program

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Abstract: This study aims to analyze the effectiveness of the Environmental Care and Culture Movement in Schools (GPBLHS) program in developing environmental attitudes among junior high school students by comparing Adiwiyata and non-Adiwiyata schools in Padang City. This research employed a quantitative ex post facto approach with 120 students as research participants, selected through purposive sampling. Data were collected using a Likert-scale questionnaire and analyzed using the Mann-Whitney U-Test due to the non-normal distribution of the data. The results show a significant difference in students' environmental attitudes between Adiwiyata and non-Adiwiyata schools, with a significant value of 0.000 ($p < 0.05$). Students in Adiwiyata schools demonstrated higher attitudes, indicated by a mean rank of 88.05, compared to 32.95 in non-Adiwiyata schools. Additionally, the percentage of environmental attitude indicators in Adiwiyata schools ranged from 71.5% to 77.3% (high category), while those in non-Adiwiyata schools ranged from 36.4% to 41.2% (low to moderate category). These findings indicate that the GPBLHS program is effective in cultivating environmental attitudes and environmentally responsible behavior among students.

Keywords: Adiwiyata School; Environmental Attitude; Environmental Education; GPBLHS Program; Junior High School Students.

Introduction

Environmental degradation issues such as air pollution, water contamination, deforestation, and climate change have become global challenges that require serious attention from all levels of society. According to recent reports from BPS-Statistics (2024), PM2.5 particle concentrations in several major cities in Indonesia, such as Dramaga (195.7 µg/m³) and Jakarta (134.5 µg/m³), have exceeded the World Health Organization's recommended safety threshold of 15 µg/m³. This condition directly contributes to the rising incidence of respiratory diseases and the declining quality of life among urban communities. In addition, water pollution caused by domestic and industrial waste remains a serious issue in many regions, where numerous water sources fail to meet environmental quality standards. Moreover, land degradation and the reduction of forest cover due to human activities further exacerbate ecosystem imbalances and accelerate the rate of climate change. Siarudin et al, (2021) explained that land degradation is one of the main drivers of ecosystem dysfunction and an increase in greenhouse gas emissions. This degradation process leads to the loss of soil's carbon sequestration capacity, reduced land fertility, and disruptions to water cycles and biodiversity. Ultimately, these conditions contribute to the acceleration of climate change and exacerbate ecosystem imbalances across various regions.

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These issues indicate that addressing environmental problems cannot rely solely on structural policies or technological interventions but also requires active community participation grounded in ecological awareness. In this context, education plays a strategic role as a means of instilling environmental values, attitudes, and behaviors from an early age (Nurul, 2023). Environmental education is not merely the transfer of knowledge about ecological issues, but also a character-building process that fosters a sense of responsibility toward environmental sustainability (Syah et al., 2025). Through an integrated educational approach, students are expected to understand the interconnectedness between human actions and their impacts on nature, and to be motivated to contribute to environmental conservation. These results are consistent with the findings of previous research by Suryani et al., (2019) which found that schools implementing integrated environmental education through green school development were successful in fostering students' understanding of the interconnectedness between human activities and environmental change. Through learning experiences that involve direct engagement and a school culture oriented toward sustainability, students become more motivated to participate in environmental conservation efforts.

One of the concrete efforts of the Indonesian government to strengthen environmental education is the Adiwiyata Program and the Environmental Care and Culture Movement in Schools (GPBLHS) developed by the Ministry of Environment and Forestry (KLHK). This program aims to create environmentally conscious and environmentally cultured schools by integrating environmental conservation principles into school policies, learning activities, and the behaviors of all school members (Kemenlh, 2019). Schools that implement GPBLHS are expected to create a learning environment that is not only clean and healthy, but also fosters the development of students' environmentally responsible character. This is in line with the findings of Astuti & Aminatun (2020) and Waqidah et al. (2020) as well as Larashati et al. (2022) which indicate that the implementation of the Adiwiyata Program has a significant influence on improving students' environmental literacy, attitudes, and pro-environmental behavior compared to non-Adiwiyata schools. The urgency of strengthening environmental education in schools has become increasingly critical due to the rising rate of environmental degradation. Matlubah (2025) emphasizes that the implementation of green education in various Indonesian schools has proven to be an important effort in fostering environmental attitudes among students. In line with these findings, a study by Zulkarnaen (2023) showed that the level of sustainability awareness among senior high school students falls into the high category, particularly in the aspects of emotional awareness and sustainable practices. These findings reinforce that environmental education can shape students' awareness and positive habits in preserving environmental sustainability. Nevertheless, such awareness needs to be continuously nurtured through structured environmental education programs, such as GPBLHS or Adiwiyata. Two recent studies indicate that environmental education plays a significant role in shaping ecological behavior and awareness, both through learning strategies and the utilization of local contexts. Khasanah & Aloysius (2025) asserts that environmental education strategies such as project-based learning, experiential learning, and community-based training are effective in enhancing students' understanding, attitudes, and sustainable waste-management practices, particularly when combined with digital media and dialogic processes that foster active engagement among learners and the community. On the other hand, the study by Ningrum & Tohani (2025) highlights the importance of utilizing local potential—specifically the Gunungkidul area—as a contextual learning resource to strengthen environmental change education. The study also demonstrates that environment-based approaches, learning models, and teaching materials can enhance students' understanding, awareness, and participation in maintaining ecosystem sustainability. Overall, both articles consistently emphasize that well-directed, contextual, and experience-based environmental education is essential for fostering more meaningful and sustainable environmental attitudes among students.

The study by Setioningrum & Subiantoro (2023) shows that the implementation of the Adiwiyata program in schools has not been fully accompanied by the optimal integration of environmental issues into classroom learning. Although schools have established an environmentally conscious culture and supporting facilities, teachers and students still rarely utilize contextual issues such as food waste as biology learning material, even though such issues are highly relevant to the environmental changes occurring around students. These findings indicate that integrating current environmental issues into learning is a critical aspect that needs to be strengthened to ensure that the Adiwiyata program not only influences school policies but also directly enhances students' understanding, awareness, and engagement in solving environmental problems. The study by Putri (2025) study further reveals that students' environmental awareness remains affected by low levels of consciousness, limited concrete actions, and insufficient internalization of ecological

values within learning activities. Therefore, to maximize the impact of the Adiwiyata Program, schools need to implement contextual and experience-based learning so that students can independently develop sustainable environmental awareness.

Junior high schools (SMP) hold a strategic position in shaping students' character, as this stage represents a transitional period in which values and habits begin to solidify. The implementation of the GPBLHS program at this level is expected to foster positive behaviors such as maintaining cleanliness, saving energy, and promoting environmental preservation around the school (Husin & Saleh, 2019). However, the effectiveness of the program's implementation in practice remains varied. Not all schools show significant improvement in environmental attitudes and environmental care behavior, which may be influenced by differences in program implementation levels, school policy support, and the participation of school members (Johnson, 2015).

Based on observations conducted at SMP Pembangunan Laboratorium UNP, one of the Adiwiyata schools in Padang City, on July 31, 2025, it was found that some students still did not demonstrate optimal environmental awareness. Interviews with the Vice Principal for Curriculum Affairs revealed that students often used water and soap excessively, were not accustomed to sorting waste, and lacked understanding of the objectives and implementation of the GPBLHS program due to generational turnover among students, and many of them were unfamiliar with what GPBLHS is. These findings were supported by observation checklist results showing low scores on indicators of resource conservation, waste management, and water utilization, as well as field observations that revealed low energy-saving behavior, such as fans remaining on in empty classrooms. This condition highlights that although the school has been granted Adiwiyata status, challenges in developing consistent knowledge and environmental attitudes among students persist, necessitating further investigation to assess the extent to which the GPBLHS program contributes to shaping students' environmental care attitudes.

Previous studies have shown that students in Adiwiyata schools have higher levels of environmental awareness than those in non-Adiwiyata schools (Syah et al., 2023). This suggests the strong potential of the GPBLHS program in fostering students' environmental care attitudes. However, comparative studies on the GPBLHS program between Adiwiyata and non-Adiwiyata schools, particularly at the junior high school level, remain limited. Therefore, research is needed to examine the extent to which the GPBLHS implementation contributes to shaping students' environmental care attitudes.

Based on the above description, this study aims to determine the differences in the level of environmental care attitudes among junior high school students in Padang City by comparing Adiwiyata and non-Adiwiyata schools. The findings of this study are expected to provide empirical contributions to strengthening environmental education policies in Indonesia and offer recommendations for schools to optimize GPBLHS implementation in supporting the development of students' ecological character in a sustainable manner.

Method

This study employed a descriptive quantitative approach using an ex post facto method, as the independent variable was not manipulated directly but was examined based on conditions that had already occurred among the respondents. This approach is consistent with the view that ex post facto research is conducted to investigate events that have taken place and subsequently trace the factors that may have caused them (Sugiyono, 2017). The objective of this study is to determine the difference in the level of environmental care attitudes between students in schools that have implemented the School-Based Environmental Culture and Awareness Movement Program (GPBLHS/Adiwiyata) and those that have not.

The study population consisted of students from schools that have implemented the Adiwiyata program and those that have not. The sample was determined using a purposive sampling technique, involving four schools: two Adiwiyata schools—SMP Pembangunan Laboratorium UNP and SMP Muhammadiyah 5 Padang—and two non-Adiwiyata schools—SMP Negeri 43 Padang and SMP Negeri 47 Padang. The total number of respondents in this study was 120 ninth-grade students, with the following distribution.

Tabel 1. Distribution of Research Respondents by School Type

School Name	Number of Respondents	Description
SMP Pembangunan Laboratorium UNP	30	Adiwiyata
SMP Muhammadiyah 5 Padang	30	Adiwiyata
SMP Negeri 43 Padang	30	Non-Adiwiyata
SMP Negeri 47 Padang	30	Non-Adiwiyata
Total Sample	120	

The data collection instrument consisted of an environmental care attitude questionnaire developed

using a four-point Likert scale based on the indicators proposed by Irfianti (2016), The indicators include waste management, water conservation, emission reduction, environmental maintenance, and resource efficiency. In addition to the questionnaire, field observation techniques were also employed to strengthen and validate the questionnaire results.

Table 2. Likert Scale Response Scoring

Answer Choices	Questionnaire Score
Disagree	1
Slightly Disagree	2
Agree	3
Strongly Agree	4

The data were analyzed using SPSS version 23 through several stages, including validity and reliability testing. Instrument validity was assessed by three expert validators based on six aspects: content appropriateness, item construction, language and readability, technical item formulation, measurement feasibility, and overall feasibility. The assessment employed a four-point scale and the Po coefficient, which was compared against the criteria established. The validation results indicated that all aspects achieved Po values ranging from 0.81 to 0.89, categorized as "very high," with individual values as follows: content appropriateness (0.88), item construction (0.88), language and readability (0.89), technical formulation (0.81), measurement feasibility (0.85), and overall feasibility (0.86). Overall, the S-CVI/Ave value of 0.86 also fell within the "very high" category, confirming that the instrument possesses strong construct validity and is suitable for use in this study, as shown in Figure 1.

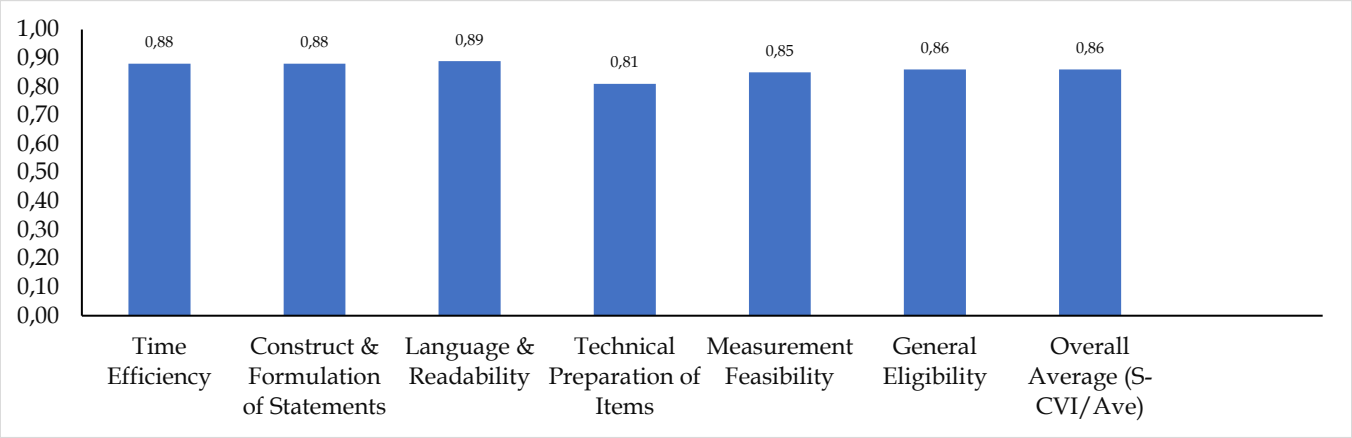

Figure 1. Bar Chart of Aspect Validation Scores

Subsequently, to ensure the reliability of the instrument (with a Cronbach's Alpha criterion of > 0.6), a normality test using the *Kolmogorov–Smirnov* method and a homogeneity test using *Levene's Test* were conducted. The results indicated that the data were not normally distributed; therefore, the analysis was continued using the *non-parametric Mann–Whitney U-Test* to examine differences in environmental care attitudes between students in Adiwiyata and non-Adiwiyata schools. The decision-making criterion was based on the significance value (p-value), where $p < 0.05$ indicates a significant difference between the two comparison groups.

Results and Discussion

This study was conducted to examine the differences in environmental care attitudes between students in Adiwiyata and non-Adiwiyata schools. Prior to hypothesis testing, descriptive statistics were presented to provide an overview of the environmental care attitude data for both groups.

Tabel 3. Descriptive Statistics

Parameter	N	Minimum	Maximum	Mean	Std. Deviation
Adiwiyata	60	36	133	74.70	18.554
Non_Adiwiyata	60	31	57	39.78	6.574
Valid N (listwise)	60				

The mean scores for each indicator of environmental care attitude were also analyzed to identify which aspects showed the most prominent differences. The indicators included waste management, water conservation, energy conservation, environmental

maintenance, and emission reduction. The detailed results are presented in Table 2.

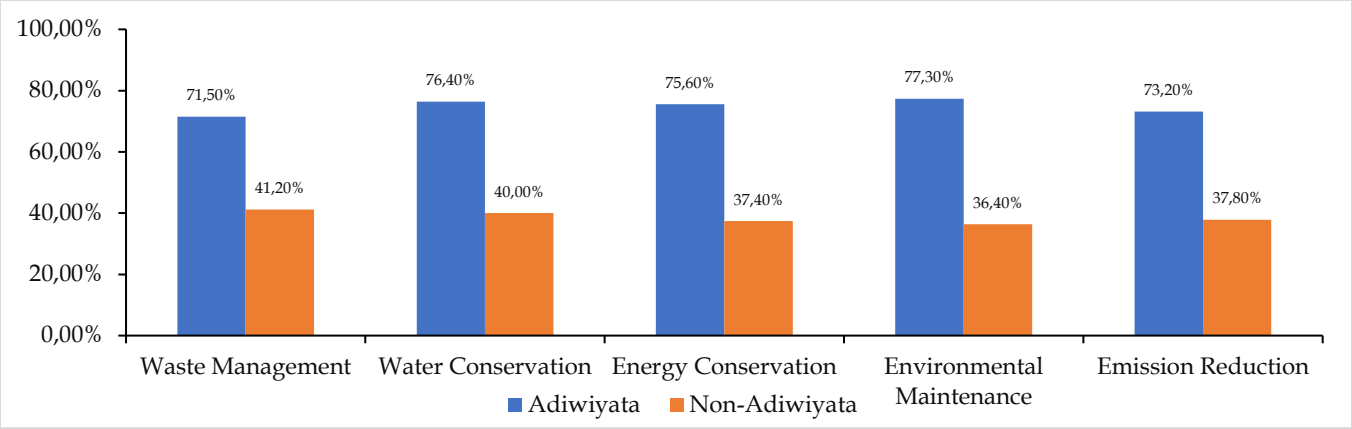

Figure 2. Indicator of Environmental Care Attitude

The data analysis began with assumption testing to determine the appropriate statistical procedure. Based on the homogeneity test using Levene's Test, a significance value of 0.000 (< 0.05) was obtained, indicating that the data were not homogeneous.

Tabel 4. Levene's Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
36.662	1	118	.000

In addition, the results of the normality test indicated that the data were not normally distributed. Therefore, the analysis of group differences was conducted using the *non-parametric Mann–Whitney U-Test*.

Tabel 5. Ranks Table

Group	N	Mean Rank	Sum of Ranks
Adiwiyata	60	88.05	5283.00
non adiwiyata	60	32.95	1977.00
Total	120		

Tabel 6. Test Statistics Table (Mann–Whitney U Test)

Parameters	Value
Mann-Whitney U	147.000
Wilcoxon W	1977.000
Z	-8.682
Asymp. Sig. (2-tailed)	0.000

a. Grouping Variable: Kelompok

The results of the study show that there is a significant difference in environmental care attitudes between students in Adiwiyata and non-Adiwiyata schools. This finding is supported by the Mann–Whitney U-Test, which produced an Asymp. Sig. (2-tailed) value of 0.000 (< 0.05). Thus, the difference did not occur by chance but demonstrates a real influence of the school environment on the development of students' environmental care attitudes. The substantially higher Mean Rank of the Adiwiyata school group (88.05) compared to the non-Adiwiyata group (32.95) further reinforces the conclusion that students in Adiwiyata schools exhibit a higher level of environmental awareness and care.

Analysis of indicator-level percentages also confirms this difference. In Adiwiyata schools, the percentage of environmental care attitudes ranged from 71.5% to 77.3% (high category), whereas in non-Adiwiyata schools, the percentages ranged from 36.4% to 41.2% (low to moderate category). The largest differences were found in the indicators of environmental maintenance and waste management, suggesting that students in Adiwiyata schools demonstrate better habits and attitudes in maintaining cleanliness and environmental sustainability within the school context.

The higher level of environmental awareness in Adiwiyata schools is closely linked to the structured implementation of the School Movement for Environmental Care and Culture (GPBLHS). Adiwiyata schools consistently integrate environmental conservation values into school policies, daily routines, extracurricular activities, and environmentally friendly facilities such as waste banks, educational gardens, recycling programs, and restrictions on plastic use. Such an environment fosters a school culture that encourages students to engage in sustainable environmental behavior. This finding aligns with the study by Rahmania (2024) which states that environmental and social factors within schools significantly influence the formation of students' sustainable behaviors. Schools that implement supportive policies, facilities, and activities related to environmental conservation have been proven to cultivate students' attitudes and concrete actions in preserving the environment.

Similar findings were also reported by Efiariza et al., (2021) who found that environmentally based schools (green-based schools) have a significant influence on students' environmental attitudes and behaviors. A school culture that integrates environmentally friendly values into both teaching–learning activities and daily routines within the school environment is able to consistently shape students' environmental awareness and character.

In contrast, non-Adiwiyata schools still tend not to have comprehensively implemented environmentally oriented learning systems and habituation practices. Although knowledge about the importance of environmental protection is taught during the learning process, the absence of concrete habituation and role modeling within the school's physical environment means that students have not fully internalized pro-environmental values in their daily lives. This finding indicates that knowledge alone is insufficient to shape attitudes; the development of ecological behavior requires consistent habituation and real-life examples within the learning environment. This finding is consistent with the study by Putri (2025) which demonstrated that science learning based on the utilization of local waste significantly improves students' environmental literacy and pro-environmental attitudes. Through direct experiences in processing and utilizing waste materials, students are able to internalize ecological values more effectively than through purely theoretical instruction. This reinforces the notion that environmental education incorporating hands-on activities is far more effective in fostering sustainable pro-environmental behavior. Similarly, Fetiana (2022) found that although students' environmental knowledge and attitudes were categorized as moderate to good, their cognitive skills and pro-environmental behaviors remained relatively low. This suggests that improvements in environmental awareness and behavior cannot be achieved solely through the transmission of knowledge, but instead require continuous habituation, direct experience, and role modeling within the school environment.

These findings are also in line with recent research emphasizing the crucial role of school culture in shaping students' environmental attitudes and behaviors. Cheng & So (2015) argue that learning environments that integrate sustainability values are more effective in enhancing students' environmental literacy than conventional classroom-based instruction. In Adiwiyata schools, the consistent implementation of the School Culture-Based Clean and Healthy Living Movement (GPBLHS) through policies, routines, and teacher role modeling creates a positive ecological climate and supports the formation of sustainable habits among students (Susanti et al., 2022).

Environmental education that involves experiential learning and project-based learning has also been proven to increase students' affective engagement and pro-environmental behavior (Anderson & Jacobson, 2018). The holistic approach adopted in the Adiwiyata program integrates classroom learning, extracurricular activities, and concrete environmental actions. Consequently, students' environmental attitudes are developed not only cognitively but also emotionally and behaviorally, resulting in tangible ecological responsibility.

From a psychological perspective, Ajzen (2011) through the Theory of Planned Behavior, explains that individual behavior is influenced by attitudes, social norms, and repeated experiences reinforced through role modeling. In Adiwiyata schools, students routinely observe positive behaviors such as waste segregation, plant care, and energy conservation demonstrated by teachers and peers. These consistent behavioral patterns strengthen students' intentions and gradually transform them into deeply embedded pro-environmental habits.

Furthermore, the GPBLHS framework reflects a systemic approach to sustainability education, as described by Sterling (2024) through the concept of the whole-school approach. This approach emphasizes the integration of sustainability values into all aspects of school life—including policies, curriculum, and community participation—thereby fostering profound and long-lasting behavioral change.

Meanwhile, research by Adawiah (2020) indicates that schools that do not implement contextual and participatory learning tend to produce students with low levels of environmental concern. Non-Adiwiyata schools typically emphasize theoretical knowledge without providing students with opportunities to actively participate in real-world activities such as recycling projects, waste banks, or school greening programs. As a result, environmental values are difficult to internalize as concrete attitudes and habits (Ekantini & Wijayanti, 2024).

The findings of this study also support UNESCO's Education for Sustainable Development (ESD) 2030 framework (UNESCO, 2020), which emphasizes empowering learners to make responsible decisions and take actions that support environmental, social, and economic sustainability. The Adiwiyata and GPBLHS programs serve as concrete implementations of ESD principles at the school level, positioning schools as living laboratories for fostering ecological character and environmentally responsible citizenship.

Conclusion

Based on the results of this study, there is a significant difference in environmental care attitudes between students in Adiwiyata and non-Adiwiyata schools. Students in Adiwiyata schools obtained a substantially higher attitude score, as indicated by a mean rank of 88.05, compared with 32.95 in non-Adiwiyata schools. The percentage of indicator achievement also supports this pattern, with Adiwiyata schools categorized as high (71.5%–77.3%), while non-Adiwiyata schools are in the low–moderate category (36.4%–41.2%). These findings suggest that schools implementing the GPBLHS framework tend to have students with stronger environmental care attitudes. However, because this study employed an ex post facto design, the results indicate associations rather than causal effectiveness; thus, it cannot be concluded that the GPBLHS program directly causes an increase in students' environmental attitudes. Theoretically, this study reinforces the idea that a consistent whole-school environmental culture—aligned with the principles of the GPBLHS program—plays an important role in shaping the affective domain related to sustainability. Practically, strengthening the implementation of environmentally oriented school culture remains important to support the development of students' ecological character in a sustainable manner. These results are consistent with previous studies reporting that sustainability-oriented educational practices are associated with higher levels of students' environmental awareness and attitudes.

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H. Y. S., N. S., A. A., and R. W.: preparation of original draft, results, discussion, methodology, and conclusion; N. S., A. A., and R. W.: analysis, review, proofreading, and editing.

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