



The Relationship Between the *Adiwiyata* Program Based on Environmental Activities and Students' Environmental Care Attitudes in Supporting Green Schools

Tuti Mutia^{1*}, Listyo Yudha Irawan¹, Sumarmi¹, Rima Meilitasari², Ravinesh Rohit Prasad³

¹ Department of Geography, Faculty of Social Sciences, Universitas Negeri Malang, Malang 65145, Indonesia

² Geography Education Program, Faculty of Teacher Training and Education, Universitas Samudra, Aceh 24416, Indonesia

³ Department of Social Sciences, School of Arts and Humanities, Fiji National University, Suva 0069-004, Fiji

Corresponding Author Email: tuti.mutia.fis@um.ac.id

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ABSTRACT

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The *Adiwiyata* program based on environmental activity is a strategic step in fostering students' environmentally caring attitudes that support sustainable Green Schools. This study aims to determine the relationship between the *Adiwiyata* program based on environmental activity and the character value of environmental care at SD Negeri 1 Sawojajar, Malang, Indonesia. This research uses a correlational method with a quantitative approach. The population of this study consists of 75 students from grades III, IV, and V at SDN 1 Sawojajar. Data collection was conducted through questionnaires, documentation, and observations measuring students' environmental care attitudes. Data analysis used correlation with a significance level of <math><0.05</math>. Based on the results of the analysis, it was found that there was a significant relationship between the *Adiwiyata* program based on environmental activities and students' environmental care attitudes, this was shown by the results of the hypothesis test which was greater ($r=0.435$) with a significance level of 0.005. The environmental activity-based *Adiwiyata* program actively engages students in environmental management activities, thereby strengthening their environmental care attitudes and supporting the creation of an environmentally friendly and sustainable green school.

1. INTRODUCTION

Adiwiyata represents an institution or a designated area for the acquisition of knowledge and the cultivation of social norms that constitute the foundation of human well-being and contribute to sustainable development. The primary objective of the *Adiwiyata* program is to foster a generation of school citizens who are accountable for the conservation and management of the environment, grounded in effective school governance to promote sustainable development [1, 2]. The *Adiwiyata* initiative assumes a pivotal role in enhancing environmental consciousness [1, 2]. The implementation of the *Adiwiyata* school program is predicated upon four key components, namely an environmentally sustainable school policy, an environmentally focused curriculum, participatory environmental activities within the educational institution, and the management of eco-friendly supporting facilities [3]. These components are instrumental in shaping the school environment to foster the habituation of environmentally responsible behaviors.

Environmental activity is one of the aspects or bases of an *Adiwiyata* school. Environmental activities are included in the aspect of participatory-based school environmental activities [4]. This means that the maintenance of the cleanliness of the school environment is carried out by all school residents, not just the participation of teachers [5]. Environmental creativity

emphasizes the perspective or attitude of students in managing the environment [6, 7]. Learners' attitudes towards environmental management are taught by teachers through teaching [7, 8]. The role of teachers in teaching environmental creativity is by teaching the process of separating organic and non-organic waste and teaching the process of recycling waste into useful things [9]. Thus, with all school members participating in environmental creativity activities, environmental management in *Adiwiyata* can be fulfilled [10, 11]. The *Adiwiyata* program is a government initiative designed to develop schools that care about and cultivate an environmental culture. This program aims to raise environmental awareness among students, teachers, and the entire school community, encouraging positive habits in preserving and protecting the environment. The program plays a crucial role in nurturing a generation that is more concerned with environmental sustainability [12].

This program is comprised of four primary components that establish the framework for the accomplishment of its objectives: ecologically sustainable policies, the adoption of an environmentally-focused curriculum, participatory environmental activities, and the administration of eco-friendly supportive facilities [11]. Each of these components assumes a distinct role in cultivating environmental consciousness and behaviors within educational institutions. As articulated by Susilowati et al. [13], the adoption of an

environmentally-focused curriculum enables students to engage with ecological issues in a more profound manner.

Through the *Adiwiyata* program, it is expected that the value of environmental care will be instilled in every individual. Adriansyah et al. [14] further highlight that this program encourages students to actively participate in various environmental activities, such as recycling, tree planting, and waste management. Active participation in these activities is crucial for forming positive habits that contribute to the preservation of the environment. Overall, the *Adiwiyata* program is considered a highly relevant solution to address the growing environmental issues. In facing global environmental challenges, this program provides a systematic framework for involving all parties in creating a school culture that cares about the environment. According to Desfandi et al. [4], the participatory and sustainable approach offered by this program can serve as a model for other educational institutions in tackling environmental problems.

The *Adiwiyata* program emphasizes the character building aspect of school members to actively participate in managing the environment properly [13]. The attitude that must be developed in the *Adiwiyata* program is environmental care [3, 14]. Caring for the environment means human attitudes or actions that prevent damage to the environment [15-17] and develop efforts to repair the damage that has occurred [16, 17]. To build an attitude of environmental care, it must unite several components within the school, namely school residents in the form of management and school systems [16, 18]. In that sense, it must be built through a school program that has been agreed upon. For example, teachers who are teaching in the classroom not only convey subject matter but convey environmental education that can foster the spirit of environmental care to their students. Then, the principal must also mobilize teachers, employees, and students to care for the environment through activities based on the *Adiwiyata* program [19, 20]. Environmental care can prevent environmental damage and repair natural damage that is already underway.

Several previous studies have been interested in examining students' environmental care attitudes. Research from Saadah et al. [21] examined the relationship between environmental knowledge and students' environmental care attitudes. Other studies also describe the impact of environmental education on improving students' environmental care attitudes [5, 19]. Furthermore, other studies also examine the role of teachers in fostering students' environmental care character. Wijayanti et al. [22]. In addition, various efforts to develop environmental care attitudes have also been developed including developing digital comics, innovative learning, and teaching materials to improve environmental care attitudes [23, 24]. However, not many have studied the integration of the *Adiwiyata* program based on environmental activity with an attitude of environmental care.

Based on this, researchers are interested in examining the relationship between the environmental activity-based *Adiwiyata* program and students' environmental awareness. The programs implemented to support the achievement of the implementation of the *Adiwiyata* program at SDN Kliwonan include greening around the outside of the classroom, namely the planting of shady trees, hydroponic planting media, the use of unused items for planting media, students are also involved in bringing plants to be planted at school, habituation of watering plants every morning by students, procurement of

clean Friday activities, utilization of vacant land used for planting media, the existence of organic and non-organic waste bins. In addition, there are slogans that urge all citizens of SD Negeri 1 Sawojajar to jointly care for, protect and manage the environment through the *Adiwiyata* program.

2. METHODOLOGY

This investigative methodology is characterized as quantitative, specifically employing a correlational design. The research setting is situated at SD Negeri 1 Sawojajar, Malang, Indonesia. The present study encompasses two distinct variables, namely the *Adiwiyata* Program predicated on environmental activities as the independent variable, and the attitude of environmental care as the dependent variable. The study's population comprised a total of 75 students, which included 25 students from the third grade, 25 students from the fourth grade, and 25 students from the fifth grade. The sampling technique adopted was a saturated sampling approach, whereby every member of the population was utilized as a sample. The instrument employed for this investigation is a questionnaire utilizing a Likert scale. Before a questionnaire is used in collecting environmental data, the instrument must be reliable and valid. The first step is the validity of the instrument by environmental experts; second, conducting a small sample trial at the UM Lab Elementary school; and third, test the reliability of the questionnaire (instrument) using the Cronbach's Alpha test with a value of 0.83 (reliable). The questionnaire can be used in research based on reliability analysis and trial results.

Data analysis methodologies employing prerequisite testing methodologies encompass normality testing, linearity assessment, and hypothesis evaluation utilizing the Pearson correlation coefficient. The normality assessment is conducted to ascertain whether the dataset in question adheres to a normal distribution. In this investigation, normality testing is performed utilizing SPSS version 23 statistical software, specifically applying the One-Sample Kolmogorov-Smirnov test, with the established criterion that a significance value exceeding 0.05 (>0.05) indicates that the data can be classified as normally distributed. The linearity assessment serves to evaluate whether the data corresponding to the two variables possess a statistically significant linear relationship.

In this research, linearity testing is executed through SPSS version 23 statistics employing the linearity test methodology. The criteria for deviation from linearity dictate that if the significance value is greater than 0.05 (>0.05), the data can be regarded as linear. Conversely, the hypothesis testing conducted in this study utilized the Pearson correlation coefficient. This Pearson correlation assessment is employed to investigate the relationship between the environmental activity-based *Adiwiyata* program and environmental stewardship attitudes. To ascertain the presence or absence of a significant correlation between the variables, a significance test is performed utilizing the two-tailed significance test at a 5% significance level. The testing criteria stipulate that if the significance value exceeds 0.05, the null hypothesis (H_0) is accepted; conversely, if the significance value is less than 0.05, the null hypothesis (H_0) is rejected. The outcomes of the correlation analysis were derived utilizing SPSS version 23 statistical software.

3. RESULT AND DISCUSSION

The environmental awareness of students at SDN 1 Sawojajar is fostered by various environmental movement activities, such as clean Friday, class hygiene competition, green school festival, waste campaign, and caring for and preserving plants and animals. In addition, socialization activities on the use of organic waste as fertilizer and inorganic waste as handicrafts can foster an attitude of environmental care. Students instill an attitude of environmental care by utilizing used materials [25] such as inorganic waste. Based on the results of the study, the categorization of the level of Environmental Care Character Value Behavior is, the low category is 23% (17 students), the medium category is 17% (13 students) and the high category is 60% (45 students). Of the 75 students, the level of their environmental care attitude can be seen in the following Table 1.

Table 1. Students' environmental care attitude level

| No. | Score | Number of Students | Percentage | Category |
|-------|---------|--------------------|------------|----------|
| 1 | >40 | 45 | 60% | High |
| 2 | 33.8-40 | 13 | 17% | Medium |
| 3 | <33.8 | 17 | 23% | Low |
| Total | | 75 | 100% | |

Source: Researcher, 2023

The table above demonstrates that the environmental care attitude of students at SDN 1 Sawojajar is notably high, with a recorded percentage of 83%. This high percentage reflects a positive and conscious attitude among students regarding their responsibility to protect the environment. According to Syahril et al. [26], environmental awareness is critical for instilling eco-friendly behaviors from an early age, fostering a culture of sustainability. As noted by Handayani et al. [3], cultivating such attitudes within educational institutions can lead to long-term positive impacts on both the local and global environment.

The students' strong environmental awareness is mirrored in their daily habits, particularly during school activities. For example, students consistently ensure that waste is disposed of properly by throwing trash into designated bins, a practice emphasized by Medina [27] as a key habit for environmental care. In addition, they reduce the use of plastic by bringing homemade meals or avoiding foods packaged in plastic, demonstrating an understanding of the harmful effects of plastic waste on the environment [26]. Such actions reflect the incorporation of environmental principles into their everyday lives, highlighting the effectiveness of environmental education programs.

Additionally, the students engage in picket duties after school hours, where they take responsibility for maintaining cleanliness around the school. These clean-up activities, referred to as "picket duties," not only help to maintain a clean environment but also serve as a form of collective responsibility [25]. According to Valianti et al. [28], this type of group effort fosters a sense of ownership and a shared responsibility among students, helping to build a sustainable mindset that extends beyond the school setting. This initiative aligns with the broader goals of environmental stewardship, which seek to embed environmentally conscious behaviors into daily routines.

The overarching aim of fostering an environmental care attitude is to prevent further environmental damage and to

restore areas that have already been affected. Some emphasize that promoting such attitudes helps prevent environmental degradation [28], while others stress the importance of proactive efforts in rehabilitating damaged ecosystems [29]. By integrating these practices into the school's routine, SDN 1 Sawojajar contributes to broader efforts in raising a generation of environmentally responsible individuals who will continue to prioritize sustainability and environmental health in the future. This approach ensures that students prioritize sustainability and environmental health, equipping them to take proactive roles in environmental conservation efforts. The overarching aim of fostering an environmental care attitude is to prevent further environmental damage and to restore areas that have already been affected. Therefore, the *Adiwiyata* program based on environmental activities strengthens students' understanding of the environment which is the foundation for developing quality schools in realizing educational progress. One of the targets of character education in the National Education System in Indonesia is the character of caring for the environment [30].

This aligns closely with the Green School concept, which focuses on creating an eco-friendly learning environment by implementing sustainable practices like waste management, energy conservation, and the promotion of biodiversity. By supporting the Green School framework, SDN 1 Sawojajar not only fosters a culture of environmental care but also empowers students to be proactive in their environmental actions. The integration of environmental awareness through such programs ensures that students are equipped with the necessary tools to confront future ecological challenges, thereby contributing to long-term sustainability goals. Through these efforts, SDN 1 Sawojajar exemplifies how environmental education, supported by both the Green School and *Adiwiyata* programs, can create a lasting impact on students' attitudes toward the environment. These activities are a manifestation of the environmental activity-based *Adiwiyata* program which reflects an attitude of environmental care. Based on the results of data analysis, students' environmental care attitudes are normally distributed with a significance value of 0.065. Furthermore, the attitude of environmental care has a liner relationship with the environmental activity-based *Adiwiyata* program, namely a significance value of 0.435. While the results of data analysis related to the relationship between environmental activity-based *Adiwiyata* program and environmental care attitude are presented in Table 2.

Table 2 illustrates the correlation value between the environmental activity-based *Adiwiyata* program variables and environmental care attitudes of 0.435 and the significance value of r count 0.000. So that the sig value is greater than 0.05 ($0.000 < 0.05$), it can be concluded that H_0 is rejected and H_1 is accepted. Therefore, it can be concluded that there is a positive and significant relationship between the environmental activity-based *Adiwiyata* program and environmental care attitudes. In line with the results of research by Desfandi et al. [4] and Saadah et al. [21] state that there is a positive relationship between the *Adiwiyata* program and the character of environmental care. The moderate correlation of 0.435 indicates a significant but not strong relationship. This may be due to a number of factors, such as program design that has not fully utilized holistic principles and new user behavior that still requires program adaptation. This moderate correlation also indicates limitations, such as the lack of long-term to initiate changes in behavior. External

factors such as poor weather conditions, local environmental conditions, and lack of access to supporting resources also affect the results. Programs that are sometimes brief and generic without considering individual needs are another

challenge. Therefore, further strategies such as mentoring, community development, and supporting facilities are needed so that positive programs can run more smoothly and effectively.

Table 2. Correlation calculation results

| | | <i>Adiwiyata</i> Program Based on Environmental Activity | Environmental Care Attitude |
|----------------------------------------------------------|-----------------|----------------------------------------------------------|-----------------------------|
| <i>Adiwiyata</i> Program Based on Environmental Activity | Person | 1 | .435** |
| | Correlation | | .000 |
| | Sig. (2-tailed) | | 75 |
| Students' Environmental Care Attitude | Person | .435** | 1 |
| | Correlation | .000 | |
| | Sig. (2-tailed) | 75 | |

** . Correlation is significant at the 0.01 level (2-tailed)

The execution of the *Adiwiyata* program, predicated on environmental activities within educational institutions, is commendable, with the objective of cultivating an ethos of environmental stewardship, as reflected in the conduct of students both within and beyond the school premises through their efforts in environmental preservation. The correlation between the execution of the *Adiwiyata* program and the propensity for environmental stewardship, as discerned from the predominant responses, encompasses: (1) The consistent availability of clean water at the educational institution, (2) The presence of extracurricular initiatives dedicated to environmental conservation within the school, (3) The continuous maintenance of cleanliness within the classroom by students, and (4) The habitual practice of ensuring the closure of water taps post-usage by the students. It can be inferred that there exists a significant relationship between the implementation of the environmental activity-based *Adiwiyata* program and the development of environmental care among the students at SDN 1 Sawojajar. In accordance with Nizaar [31], the *Adiwiyata* program is recognized as an initiative with the capacity to enhance awareness regarding the imperative of environmental protection.

One of the environmental protection programs implemented at SDN 1 Sawojajar is the greening movement. The greening program begins with the delivery of material on the importance of caring for the environment around children and an explanation of the planting media that will be used for practice in this activity. After delivering the material, students provide simulations in the form of how to plant the right and right plants in a pot with soil planting media and how to plant plants with hydrogel (hydroponic) planting media. This hydrogel or hydroponic cultivation technique emphasizes meeting the nutritional needs of plants or agriculture without soil [32]. The activity can be seen in Figure 1.

Greening activities carried out at SDN 1 Sawojajar can significantly enhance students' awareness of the environment in a sustainable manner. These activities are designed not only to educate students about the importance of environmental conservation but also to engage them in practical efforts that have a lasting impact on their surroundings. By participating in greening initiatives, students become more conscious of their role in protecting and preserving the environment, fostering a sense of responsibility toward nature [33]. The use of environmentally friendly materials is a crucial step in maintaining environmental sustainability. Choosing eco-friendly products minimizes harmful effects on the

environment and promotes the use of resources that are less detrimental to ecological health. As highlighted by Khan et al. [34], employing environmentally friendly goods supports various activities aimed at preserving environmental health. This proactive approach encourages students to make informed choices about the materials they use in their daily lives, reinforcing the importance of sustainability. Based on this, the *Adiwiyata* program based on environmental activities contributes to forming students' environmental psychology, such as student participation in real-life activities which are pro-environmental activities.



Figure 1. SDN 1 Sawojajar students doing greening in the school area

Greening is an essential activity that should be implemented conceptually to ensure effective environmental preservation. It encompasses a wide range of practices aimed at restoring, maintaining, and improving land conditions. Greening activities help create environments that can produce and function optimally [35]. By focusing on these goals, greening initiatives help students learn that their efforts contribute to broader ecological goals, fostering a deeper connection with their community and the planet.

Moreover, the greening activities at SDN 1 Sawojajar serve as a model for integrating environmental education into the curriculum. By combining hands-on activities with theoretical

knowledge, educators can create a holistic learning experience that resonates with students. This integration helps to solidify the concepts of environmental stewardship and sustainable practices, preparing students to be informed citizens who prioritize ecological health in their future endeavors [36].

In conclusion, the greening activities at SDN 1 Sawojajar not only enhance students' awareness of environmental issues but also instill lifelong values of sustainability and responsibility. By utilizing eco-friendly materials and implementing thoughtful greening practices, the school fosters an environment where students can thrive as conscientious stewards of the planet. As they engage in these initiatives, students develop a sense of ownership and commitment to preserving their surroundings, ultimately contributing to a healthier and more sustainable future [37].

Koh et al. [38] refer to the character of caring for the environment as ecological character. Ecological character reflects attitudes and actions that always strive to prevent damage to the natural environment and its surroundings, as well as to develop efforts to repair any damage that has occurred. Furthermore, this character encompasses actions to provide assistance to those in need. Therefore, environmental education should extend beyond simply teaching basic competencies to students; it must also be designed to help students understand, recognize, internalize values, and exhibit behaviors aligned with those values [38].

Through learning activities, students are expected to become intellectually and morally intelligent individuals. Environmental character education aims not only to impart knowledge but also to shape students' attitudes and behaviors, making them sensitive to environmental issues. This education can be implemented through various activities that emphasize students' active involvement in caring for and preserving their environment [39]. In this context, the environmental activity-based *Adiwiyata* program serves as an effective strategy for fostering students' ecological character.

The *Adiwiyata* program has similarities with international education programs, such as Eco-Schools founded by the Foundation for Environmental Education (FEE) and the Green School Movement in several countries. This can be seen from the approach based on environmental activities and student involvement in environmental education in schools [40]. However, the *Adiwiyata* program focuses more on the local context of Indonesia, by integrating local wisdom values, such as mutual cooperation and community-based environmental management. The difference with the Eco-Schools program lies in its scope, approach, and assessment system. Eco-Schools is a global program that is standardized with international guidelines, such as the awarding of the Green Flag as an indicator of success that is applied in various countries. One of them is the Higher Education Institution (HEI) Portugal and HEI Coimbra Business School | ISCAC Portugal is a successful case that has been recognized with the Green Flag award [41]. Through the Eco-Schools program, this school was able to create an environmental protection program with the help of students who participated and changed their behavior to support environmental conservation. It is hoped that other schools will adopt this case study as a model for a more sustainable society.

Given the importance of environmental character education, it is crucial to carry out these activities routinely through school programs. The *Adiwiyata* program, as an environmental education initiative, can serve as an ideal platform to integrate environmental values into the curriculum

and school activities. By engaging students directly in environment-related activities, schools not only raise environmental awareness but also inspire students to take concrete actions in protecting and caring for their surroundings [42, 43].

4. CONCLUSIONS

Based on the results of the study, the average environmental awareness attitude of the students shows a high level, demonstrating a significant relationship between the environmental activity-based *Adiwiyata* program and the environmental care attitude of SDN 1 Sawojajar students, as evidenced by a significance value (2-tailed) of 0.000. This program encourages students to be more creative and wise in responding to environmental issues, providing them with the opportunity to learn directly through experiences in environmental conservation. Students are involved in various activities that raise their awareness about the importance of environmental sustainability, and the learning focused on creativity in environmental conservation helps them develop innovative solutions to local environmental problems. Furthermore, the environmental awareness built through this program not only impacts students at school but also influences their behavior in daily life. The program supports the principles of Green School by integrating sustainability concepts such as efficient waste management, energy conservation, and biodiversity conservation. Through the implementation of the Green School concept, SDN 1 Sawojajar plays a role in shaping a generation that is committed to environmental conservation, strengthening sustainability, and creating a healthy and eco-friendly environment in their everyday lives.

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