

ESD-Based School Development in Adiwiyata Junior High Schools

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ABSTRAK

Pendidikan untuk Pembangunan Berkelanjutan (ESD) merupakan pendekatan penting untuk menumbuhkan budaya keberlanjutan di kalangan siswa. Penelitian ini menganalisis pengembangan sekolah berbasis ESD pada Sekolah Menengah Pertama (SMP) Adiwiyata, dengan fokus pada implementasi kegiatan yang mendukung peningkatan kesadaran lingkungan siswa. Penelitian ini menggunakan desain kualitatif deskriptif-eksploratif, dengan memanfaatkan wawancara, kuesioner, dan observasi untuk mengumpulkan data secara komprehensif. Teori Whole-School Approach digunakan sebagai panduan analisis untuk menelaah bagaimana ESD diintegrasikan lintas kepemimpinan sekolah, budaya sekolah, kurikulum, serta praktik partisipatif. Temuan menunjukkan bahwa implementasi ESD pada SMP Adiwiyata secara umum telah berjalan dengan baik, khususnya dalam memperkuat nilai peduli lingkungan dan praktik lingkungan sehari-hari. Namun demikian, perbaikan masih diperlukan pada integrasi kurikulum dan pengembangan keterampilan hidup siswa yang berkaitan dengan keberlanjutan secara sistematis. Selain itu, masih terdapat tantangan dalam meningkatkan kesadaran keberlanjutan siswa dalam jangka panjang, yang menuntut kolaborasi yang lebih kuat antara sekolah dan masyarakat. Penelitian ini diharapkan dapat memberikan rekomendasi untuk pengembangan ESD lebih lanjut pada SMP Adiwiyata serta pada konteks sekolah yang serupa.

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ABSTRACT

Education for Sustainable Development (ESD) is an important approach for cultivating a sustainability culture among students. This study analyzes the development of ESD-based schools in Adiwiyata Junior High Schools, with a focus on the implementation of activities that support students' environmental awareness. The research employs a descriptive exploratory qualitative design, using interviews, questionnaires, and observations to collect comprehensive data. The Whole-School Approach Theory guides the analysis to examine how ESD is integrated across school leadership, school culture, curriculum, and participatory practices. The findings indicate that ESD implementation in Adiwiyata Junior High Schools is generally running well, particularly in strengthening environmental care values and everyday environmental practices. Nevertheless, improvements are still needed in curriculum integration and in the systematic development of students' sustainability-related life skills. In addition, challenges remain in increasing students' long-term sustainability awareness, which requires stronger

collaboration between the school and the community. This study is expected to provide recommendations for further ESD development in Adiwiyata Junior High Schools and in similar school contexts.

1. INTRODUCTION

Education for Sustainable Development (ESD) has been positioned as a strategic approach to instill values, attitudes, and competencies relevant to sustainability needs in the present and future. In the school context, ESD is not merely understood as an additional body of knowledge; rather, it is conceptualized as a process of building a sustainability culture through educational practices. Therefore, implementing ESD requires systemic changes across multiple components of a school, including governance, curriculum, teaching and learning processes, and participation of the entire school community. In Indonesia, the linkage between ESD and the broader sustainability agenda is reflected through environmentally friendly school initiatives, one of which is operationalized through the Adiwiyata program ecosystem. Adiwiyata, as shown in prior studies, is understood not only as an effort to promote environmental awareness through symbolic activities, but also as a program requiring consistent implementation through management and institutionalization of environmentally responsible practices (Nurhafni *et al.*, 2019; Halimah, Suriansyah and Syaifuddin, 2022; Kuswati *et al.*, 2024). However, existing evidence also suggests that implementation varies across schools depending on governance readiness, resource capacity, and the quality of integration between environmental practices and classroom learning. Consequently, a study that specifically examines how ESD-based school development is carried out in Adiwiyata Junior High Schools becomes essential to clarify both the strengths and implementation gaps within the program.

A key aspect of ESD is its emphasis on the whole-school approach, which places the school as a coordinated unit of change. The whole-school approach emphasizes that sustainability learning should align with everyday practices within the school environment, thereby ensuring consistency between what students learn, what they do, and what they experience. In this sense,

ESD requires synergy among curriculum elements (what is learned), pedagogy (how it is taught), and the school ethos (the values and culture built through collective action). Consistent with this perspective, research on the implementation of ESD in Adiwiyata schools indicates that success depends not on a single component, but on the integration of program implementation (Adriyanto *et al.*, 2020). In other words, ESD implementation in Adiwiyata schools should function as educational management practice that integrates planning, organizing, implementing, and strengthening an environmentally oriented school culture over time. In practice, one common challenge is the gap between environmental program implementation and integration within the curriculum or formal learning. Studies focusing on Adiwiyata-based school management highlight the need to strengthen management design and develop the competencies of school members so that environmental objectives are achieved consistently (ZAKIYAH *et al.*, 2021; Halimah, Suriansyah and Syaifuddin, 2022). Although several schools have demonstrated progress in environmental initiatives, strengthening students' life skills and the integration of learning activities remains a recurrent area for improvement. Such conditions call for more detailed investigation in the context of Junior High Schools, particularly because the developmental characteristics of students at this stage involve distinct dynamics in shaping environmental behavior and awareness.

Adiwiyata as an environmental education program at the school level has been widely studied from different perspectives, including implementation, strategies, and impact evaluation. At the level of policy and practice, studies indicate that schools capable of developing an environmentally supportive learning environment tend to demonstrate synergy between internal policies and school community participation. For instance, a literature review on implementation and impacts of environmentally sound schools and the

Adiwiyata program in East Java emphasizes the association between the program and improvements in environmental awareness as an intermediate outcome (Aqilah and Lathifah, 2023). Other studies show that program innovation—such as using a penta helix approach—can expand support for implementing green school initiatives (Megawati *et al.*, 2022). In contrast, program evaluation research also suggests that Adiwiyata implementation requires system strengthening to avoid the program becoming temporary or limited to specific moments (ZAKIYAH *et al.*, 2021). Moreover, some studies frame Adiwiyata as a bridge between environmental education goals and character education through ecological practice, where environmental care attitudes may be shaped through direct experience (Sunarto, 2023; Ruslan *et al.*, 2024). However, although the literature provides a general picture, there remains a need to refine understanding regarding how ESD is operationalized in specific school contexts within the Adiwiyata framework. This need is particularly evident at the level of curriculum integration and life skills development, both of which are key targets of ESD. Therefore, an exploratory descriptive study in Adiwiyata Junior High Schools in Banyumas Regency is relevant for producing a more context-specific and accurate understanding.

This research is important for several academic and practical reasons. First, conceptually, ESD requires an integrated approach that combines learning, school culture, and school-community relationships; therefore, using the whole-school approach framework is crucial for understanding truly comprehensive implementation (Adriyanto *et al.*, 2020). Second, at the Junior High School level, the development of students' sustainable awareness may face variability in the intensity of environmental practices, the quality of program implementation, and the consistency of routines. Such variability may be influenced by schools' governance readiness and the quality of coordination among internal and external stakeholders. Third, although Adiwiyata has been implemented in various regions, previous findings suggest that program optimization still requires strategies tailored to local needs, as

reflected in optimization strategies for Adiwiyata in particular regions (Nada, Fajarningsih and Astirin, 2021b). Fourth, curriculum integration often becomes a weak point in environmental program implementation, and thus this study will examine how integration occurs in planning and implementation practices. Fifth, ESD also aims at building life skills, which requires mapping contextual learning practices and students' direct experiences. This makes observation and rigorous triangulation necessary. Sixth, challenges in enhancing students' sustainable awareness cannot be separated from collaboration between schools and communities, and therefore this research will examine the collaborative dimension as part of school development. Accordingly, this study contributes not only to academic understanding of ESD implementation in Adiwiyata programs, but also provides actionable recommendations for strengthening school practices.

Specifically, this study aims to analyze ESD-based school development in Adiwiyata Junior High Schools in Banyumas Regency, with a focus on implementing activities that support students' environmental awareness. This focus is important because ESD emphasizes the formation of awareness and consistent environmental action rather than merely achieving administrative targets. Through a qualitative research design, the study seeks a deep understanding of how schools plan programs, execute activities, and build participation of school members in the Adiwiyata context. A descriptive-explorative approach enables the researcher to explore implementation patterns, operational mechanisms, and lived experiences of students and stakeholders. Data collection through interviews, questionnaires, and observation is positioned as a triangulation strategy to reduce information bias and improve the credibility of findings. This approach is consistent with prior research that combines implementation evidence to examine internal effectiveness (Adriyanto *et al.*, 2020; ZAKIYAH *et al.*, 2021). In addition, using the whole-school approach framework as an analytical theory provides guidance for assessing the extent to which integration occurs, both at the structural level of the program and at

the cultural level of school daily practice. By analyzing implementation through this framework, the study is expected to identify areas where practices have been functioning well and areas that require improvement, particularly in curriculum integration and the development of students' life skills.

In the existing literature, ESD implementation in Adiwiyata schools has been described as a process that can run effectively when schools implement environmental practices in a structured and sustainable manner. For example, research on ESD implementation in Adiwiyata schools shows that ESD can be operationalized through integration of environmental activities into school management systems (Adriyanto *et al.*, 2020). The study suggests that implementation success depends on how schools manage ESD components such as learning-related activities and environmental actions, which subsequently contribute to shaping students' attitudes and habits. Other studies further indicate that an environmentally supportive school environment supports the process of character education related to environmental care (Sunarto, 2023; Ruslan *et al.*, 2024). Nevertheless, the literature also implies that ESD improvement still requires strengthening—particularly curriculum integration—so that program implementation does not remain confined to project-based activities. Within this context, an in-depth study in Banyumas on Adiwiyata Junior High Schools is necessary to identify the actual forms of curriculum integration occurring in practice. Research on Adiwiyata-based school management also emphasizes that program management influences achieving environmental objectives within schools (Halimah, Suriansyah and Syaifuddin, 2022). Moreover, studies on strategies and program optimization reinforce that system strengthening requires planned and measurable actions, including stakeholder involvement (Nurhafni *et al.*, 2019; Nada, Fajarningsih and Astirin, 2021a). Therefore, this study extends prior literature by providing contextual evidence from Banyumas Regency at the Junior High School level, with an emphasis on ESD-based school development.

Despite these contributions, there remains a research gap that needs to be articulated both conceptually and empirically. First, many existing studies focus on particular education levels or provide broad assessments of program implementation, while detailed mapping of ESD integration into curricula and life skills development has not been fully addressed at the Junior High School level. Second, studies addressing Adiwiyata often emphasize environmental activity implementation, yet they do not always examine how the entire school system (whole-school) orchestrates implementation in everyday practice. Third, regional characteristics and sociocultural dynamics may influence program effectiveness, meaning findings from one region may not automatically generalize to others, including Banyumas Regency. Fourth, the role of school-community collaboration as a supporting factor for sustainable awareness has not been sufficiently elaborated in the context of Adiwiyata Junior High Schools, even though collaboration is a key prerequisite for ESD. Fifth, although ESD is regarded as important for building a sustainability culture, empirical evidence is still needed to show how schools transform ESD goals into real learning experiences and life practices for students. Therefore, this study addresses the gap by integrating analysis of ESD-based school development, focusing on environmental awareness, and emphasizing curriculum integration and students' life skills within a whole-school approach framework.

The novelty and originality of this study lie in several interconnected aspects. First, this research examines ESD-based school development specifically in Adiwiyata Junior High Schools, thereby extending the scope of studies on ESD that often concentrate on other educational contexts. Second, the study employs the whole-school approach framework to assess the integration of ESD implementation rather than merely documenting the existence of environmental activities. Third, the study places Banyumas Regency as a specific context, producing a more contextual understanding of how schools build sustainable awareness through the Adiwiyata program. Fourth, the descriptive-explorative qualitative method with

triangulation of interviews, questionnaires, and observation enables the disclosure of detailed, “lived” implementation practices, including how curriculum integration occurs in both documents and actual learning practices. Fifth, the study focuses on two frequent implementation challenges: curriculum integration and the development of students’ life skills. Sixth, the study highlights challenges in enhancing sustainable student awareness through collaboration between schools and communities, positioning the social ecosystem as part of the implementation analysis. Accordingly, the study not only describes ESD implementation practices but also clarifies ESD-based school development as a school management process requiring systemic synergy.

The research problem in this study is: How does ESD-based school development occur in Adiwiyata Junior High Schools in Banyumas Regency, particularly in relation to the implementation of activities supporting students’ environmental awareness, curriculum integration, life skills development, and collaboration between schools and communities?

2. METHOD

This descriptive qualitative study will be framed through the ESD/Adiwiyata literature to explain how ESD-informed school culture develops through whole-school mechanisms. ESD is treated as a holistic approach that integrates sustainability principles across curriculum, learning environments, and governance, thereby strengthening students’ sustainable awareness and civic participation (Adriyanto *et al.*, 2020; Megawati *et al.*, 2022; Wibowo *et al.*, 2023). The synthesis emphasizes that school culture—shared vision, participatory routines, and daily practices—is the central medium through which ESD implementation becomes meaningful and persistent (Adriyanto *et al.*, 2020; Halimah, Suriansyah and Syaifuddin, 2022; Aqilah and Lathifah, 2023). Governance is also highlighted as a determinant factor: effective Adiwiyata implementation requires aligned policies, coordinated planning, and stakeholder engagement, while weak governance and resource constraints may hinder progress (Nada, Fajarningsih and Astirin, 2021a;

ZAKIYAH *et al.*, 2021; Zaliyanti and Azani, 2024).

Methodologically, observation, interviews, and document analysis are selected because they enable an in-depth understanding of stakeholders’ experiences and the sequencing of cultural change, rather than only measuring program outputs (Adriyanto *et al.*, 2020; ZAKIYAH *et al.*, 2021). This framing supports an analytic focus on curriculum integration, life skills development, and school-community collaboration within the Banyumas Adiwiyata context.

3. RESULT AND DISCUSSION

The school culture development model implemented in schools includes the development of values, technical-level development, social-level development, the development of school culture among students, and the evaluation of school culture. The research findings obtained by the researchers are described as follows.

At present, Adiwiyata schools serve as one of the exemplary educational institutions that emphasize environmental stewardship in cultivating students’ environmentally caring character. The environmental care character promoted in Adiwiyata schools consistently seeks to instill attitudes of environmental responsibility among students. This environmentally caring attitude is included among the 18 core values of national character and cultural education.

In this regard, the principal of SMPN 1 Purwojati emphasized the importance of teaching environmental care to students, stating:

“Teaching students to care for the environment helps build awareness of the importance of environmental preservation from an early age, enabling them to grow with an understanding of their role in protecting the Earth. With proper understanding, students can take simple actions such as reducing plastic use, recycling, and disposing of waste properly. These actions contribute to minimizing negative environmental impacts. Environmental education also encourages students to think critically about global issues such as climate change, deforestation, and pollution, as well as to seek creative solutions to address them.”

Based on the interview results above, it can be understood that environmental care values are strongly emphasized for internalization among students, beginning with reducing plastic use, recycling, and disposing of waste properly. Consequently, students in Adiwiyata schools are expected to develop awareness of current global environmental issues. Ultimately, they are expected to recognize the importance of adopting environmentally caring attitudes. This aligns with the fundamental objectives of the Education for Sustainable Development (ESD) concept.

At the technical level, teaching environmental care does not merely stop at slogans but is also directly practiced within the school environment. Implementation at the technical level is realized through routine activities and school programs in Adiwiyata schools, such as daily cleaning duties, “Clean Friday” activities, and cleanliness competitions.

The principal of SMPN 1 Purwojati stated:

“There are routine school activities related to the internalization of environmentally caring character, such as daily classroom cleaning duties, cleanliness competitions in each class, and the SAGUSAPON movement (One Teacher, One Tree). For students, there is the Sedekah Bunga (One Student, One Flower) initiative, in which students bring plants from their homes to be planted in front of their respective classrooms and cared for. Because students bring their own plants, they develop a sense of ownership, which encourages them to nurture and protect the plants they have planted.”

In the evaluation stage of developing an ESD-based school culture, the researchers obtained the following data:

Table 1. Assessment Results of ESD-Based School Culture Implementation

	Implementation of ESD-Based School Culture			
	Natural Resources	Climate Change	Rural Development	Disaster Prevention and Management
Mean	133,8	50,5	13,7	28,9
Maximum Score	192	78	18	42
Result Percentage (%)	69,7%	64,7%	76,1%	68,8%

The data presented in Table 1 show the results for each aspect, with differing numbers of statement items. Therefore, the average scores

and maximum values do not fall within the same numerical range. Meanwhile, the mean percentage (%) represents the level of implementation for each aspect after being converted to a 100-point scale. Among the four aspects, the highest level of ESD value implementation in Adiwiyata schools is observed in the rural development aspect. Subsequently, the levels of implementation from highest to lowest are found in the natural resources aspect and the disaster prevention and management aspect. In contrast, the climate change aspect exhibits the lowest level of implementation.

The measurement results of ESD implementation in Adiwiyata schools indicate that the implementation level in the natural resources aspect reached 69.7%, the climate change aspect reached 64.7%, the rural development aspect reached 76.1%, and the disaster prevention and management aspect reached 68.8%. The highest percentage was found in the rural development aspect, which includes attitudes toward managing organic and inorganic waste, maintaining environmental cleanliness by not disposing of waste into rivers, and reducing global warming by minimizing waste burning both at school and at home.

The implementation of ESD values by students extends to the rural development aspect, for example through waste management practices. In this regard, Adiwiyata schools demonstrate a considerable level of awareness by avoiding waste disposal into rivers and refraining from burning waste. Nevertheless, the implementation of organic waste management within schools remains limited. The results obtained from students’ responses to the distributed questionnaires indicate that Adiwiyata schools outperform others in two categories of activities. However, the overall implementation of waste management practices in Adiwiyata schools is still considered low.

The activity categories employed by the researchers consisted of learning activities, extracurricular activities, and other activities. According to Papadimitriou (2010), the implementation of ESD values encompasses three domains: the pedagogical domain (biology learning activities), the social and organizational domain (extracurricular activities), and the

technical–environmental–economic domain (other activities) (Kalaitzdis, 2010).

The categorization of activities within the environmental perspective of ESD is further supported by the study conducted by Yuli Priyanto et al. Their research at SMK Negeri 1 Ngasem demonstrated that the implementation of environmental awareness can be taught through various approaches, including intracurricular and extracurricular activities. In addition, routine habituation, spontaneous habituation, and role modeling were also applied. These findings indicate that activities occurring throughout the entire school day from students' arrival to their departure have a significant influence on the implementation of environmental awareness. (Priyanto, et.al., 2013).

The implementation of ESD values across each aspect of the environmental perspective demonstrates varying outcomes. The results obtained are directly proportional to the level of ESD implementation. The highest level of implementation in the natural resources aspect was reflected in the category of other activities in Adiwiyata schools.

The next environmental perspective aspect examined is climate change. The researchers proposed statements related to students' activities associated with climate change. These activities include both direct and indirect actions that may influence climate change or contribute broadly to global warming.

The findings of this study are consistent with the statement by Ummi Nur Rokhmah, who reported that the Adiwiyata school MIN Tegalasri Wlingi Blitar has implemented the management and maintenance of school gardens as a strategy for natural resource conservation within the school environment. (Rokhmah, 2019).

The implementation of ESD values by students extends to the rural development aspect, for instance through waste management practices. In this regard, Adiwiyata schools demonstrate sufficient awareness by refraining from disposing of waste into rivers and avoiding waste burning. Nevertheless, the implementation of organic waste management within schools remains limited. The results derived from students' responses to the questionnaires

distributed by the researchers indicate that Adiwiyata schools perform better in two activity categories, namely the rural development and natural resources aspects. However, the overall implementation of waste management practices in Adiwiyata schools is still considered low.

The low level of waste management may be attributed to insufficient efforts in fostering environmental awareness. In fact, such awareness can be instilled in students through learning sessions or other school activities. As observed in schools in West Nusa Tenggara, Hari reported that at certain times, geography and biology teachers conduct field activities aimed at observing and understanding the environment. Art teachers also contribute by teaching students how to create recycled products from commonly used materials, thereby enabling these products to acquire economic value. (Sutanto, 2017).

According to the Whole-School Approach theory, educational strategies that involve all members of the school community including students, teachers, parents, and local stakeholders in decision-making processes are essential. This approach aims to create a holistic and sustainable learning environment in which all aspects of school life contribute to students' development.

The Whole-School Approach (WSA) serves as an effective framework for supporting sustainable learning in schools. This approach integrates sustainability principles into all aspects of school life, creating an environment that focuses not only on academic achievement but also on social and environmental development. The core components of the Whole-School Approach include participatory decision-making, the integration of school culture and ethos, curriculum integration, monitoring and evaluation, community engagement, and student empowerment.

The WSA embeds the principles of sustainable development into both the curriculum and school operations. This means that students learn about sustainability not only through theoretical instruction but also through everyday practices at school, such as resource management and community involvement. (Matakupan, 2014; Astria dan Sukartaji, 2019). Furthermore, the Whole-School Approach

(WSA) enables the integration of Education for Sustainable Development (ESD) into both formal and non-formal curricula. This means that students learn about sustainability not only in classroom settings but also through practical projects and extracurricular activities that address local and global issues.

This approach encourages active participation from all stakeholders, including students, teachers, parents, and the local community. By engaging the community in the learning process, schools can design programs that are relevant and responsive to local needs while fostering a sense of ownership over sustainability initiatives. The WSA promotes experiential learning, in which students are directly involved in sustainability-focused projects such as waste management, sustainable agriculture, and environmental conservation. These experiences not only enrich students' knowledge but also develop practical skills essential for their future.

By emphasizing lifelong learning, the WSA equips students with the mindset to continuously engage with sustainability issues throughout their lives. This approach fosters a generation that is more aware of its responsibilities toward the environment and society.

4. CONCLUSION

4.1. Conclusion

Based on the results of the research and discussion, it can be concluded that the development of a school culture based on Education for Sustainable Development (ESD) is carried out through several stages, namely: value development, technical-level development, social-level development, the cultivation of school culture among students, and school culture evaluation.

The measurement results of ESD implementation in Adiwiyata schools are as follows: implementation in the natural resources aspect reached 69.7%, the climate change aspect 64.7%, the rural development aspect 76.1%, and the disaster prevention and management aspect 68.8%. The highest percentage was observed in the rural development aspect, which includes attitudes toward managing organic and inorganic waste, maintaining environmental

cleanliness by not disposing of waste into rivers, and reducing global warming by minimizing waste burning both at school and at home.

4.2. Recommendations

Adiwiyata schools are recommended to strengthen the integration of Education for Sustainable Development (ESD) values into classroom learning, particularly in the climate change aspect, which remains relatively low, and to optimize organic waste management through more practical and sustainable activities. In addition, improving teacher competencies and enhancing collaboration with the community should continue to be prioritized to support the sustainability of ESD implementation. Future research is expected to conduct comparative and evaluative studies on the effectiveness of ESD implementation in both Adiwiyata and non-Adiwiyata schools.

DAFTAR PUSTAKA

- Adriyanto, Y. *et al.* (2020) 'The Implementation of Education for Sustainable Development in Adiwiyata School'. Available at: <https://doi.org/10.4108/eai.12-10-2019.2296466>.
- Aqilah, S. and Lathifah, S.S. (2023) 'Implementation and Impact of Environmentally Sound Schools and Adiwiyata Program in East Java Province: A Literature Review', *Equator Science Journal*, 1(1), pp. 9–15. Available at: <https://doi.org/10.61142/esj.v1i1.1>.
- Halimah, H., Suriansyah, A. and Syaifuddin, A.R. (2022) 'Adiwiyata-Program-Based School Management', *International Journal of Social Science and Human Research*, 05. Available at: <https://doi.org/10.47191/ijsshr/v5-i12-06>.
- Kuswati, R. *et al.* (2024) 'Institutional Enhancement Through Green School Program in Order to Achieving "Sekolah Adiwiyata"', *British Journal of Environmental Studies*, 4(1), pp. 41–47. Available at: <https://doi.org/10.32996/bjes.2024.4.1.6>.
- Megawati, S. *et al.* (2022) 'Adiwiyata Program Innovation Through Penta Helix Approach',

- Education Research International*, 2022, pp. 1–10. Available at: <https://doi.org/10.1155/2022/7223314>.
- Nada, H.N., Fajarningsih, R.U. and Astirin, O.P. (2021a) ‘Adiwiyata (Green School) Program Optimization Strategy in Malang Regency to Realize Environmentally Friendly School Citizens’, *Ijorer International Journal of Recent Educational Research*, 2(2), pp. 121–137. Available at: <https://doi.org/10.46245/ijorer.v2i2.83>.
- Nada, H.N., Fajarningsih, R.U. and Astirin, O.P. (2021b) ‘Environmental Education to Build School Members’ Character’, *Jpbi (Jurnal Pendidikan Biologi Indonesia)*, 7(1), pp. 43–52. Available at: <https://doi.org/10.22219/jpbi.v7i1.14283>.
- Nurhafni, N. *et al.* (2019) ‘The Strategy of Environmental School Through the Program of National & Adiwiyata School in Pekanbaru (High School Level)’, *Interdisciplinary Journal of Environmental and Science Education*, 15(1). Available at: <https://doi.org/10.29333/ijese/6289>.
- Ruslan, R. *et al.* (2024) ‘Environmental Care: The Strengthening Character Education Through Islamic Religious Education (Ire) Development’, *Penamas*, 37(1), pp. 116–130. Available at: <https://doi.org/10.31330/penamas.v37i1.791>.
- Sunarto, S. (2023) ‘Environmental Literacy and Care Behavior Through Adiwiyata Program at Elementary School’, *Al-Ishlah Jurnal Pendidikan*, 15(3), pp. 3040–3050. Available at: <https://doi.org/10.35445/alishlah.v15i3.3887>.
- Wibowo, N.A. *et al.* (2023) ‘Students’ Environmental Care Attitude: A Study at Adiwiyata Public High School Based on the New Ecological Paradigm (NEP)’, *Sustainability*, 15(11), p. 8651. Available at: <https://doi.org/10.3390/su15118651>.
- ZAKIYAH, S.U. *et al.* (2021) ‘Adiwiyata Program Implementation Evaluation’, *JKP | Jurnal Kepemimpinan Pendidikan*, 4(1), pp. 534–540. Available at: <https://doi.org/10.22236/jkpuhamka.v4i1.7470>.
- Zaliyanti, A.M. and Azani, M.Z. (2024) ‘Implementation of the Adiwiyata Program by the Principal to Foster Students’ Morals Towards the Environment’, *Jie (Journal of Islamic Education)*, 9(1), pp. 359–383. Available at: <https://doi.org/10.52615/jie.v9i1.391>.