
RESEARCH ARTICLE

Institutional Enhancement through Green School Program in Order to Achieving “Sekolah Adiwiyata”

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ABSTRACT

“Sekolah Adiwiyata” or green school, is a program implemented in Indonesia as part of efforts to integrate environmental education and sustainability into the formal education system. Internalization and implementation are not limited to students alone but also involve teachers, parents, and other school community members. Additionally, the concept of green schools is internalized and implemented in the teaching curriculum. SD Muhammadiyah 24 Surakarta is one of the elementary schools that has begun implementing the green concept. However, in this case study, there are several issues in the implementation of the green concept in the school, such as readiness in terms of human resources, school management, and low information systems. In order to assist in resolving these issues, the P2AD Management team from UMS conducted institutional enhancement at SD Muhammadiyah 24 Surakarta through several work programs of community development such as green school workshops, assistance in designing the school website, and providing three-color waste bins (organic, inorganic, hazardous) along with explanations on their use. The method used in implementing the service program includes preparation and coordination, program implementation, evaluation, and monitoring.

KEYWORDS

Case study, community development, green school, primary school institutional, SD Muhammadiyah 24 Surakarta, sekolah adiwiyata.

ARTICLE INFORMATION

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1. Introduction

SD Muhammadiyah 24 Surakarta, founded in 1979 is situated at Jl. Nusa Indah 1 No. 16 Rt. 1 Rw. 4, Surakarta, Pasar Kliwon, Surakarta, 57115. The school is driven by a vision and mission to enhance its educational endeavors. Its vision aims to nurture outstanding individuals in IMTAQ (Iman dan Taqwa or faith and piety) and IPTEK (Ilmu Pengetahuan dan Teknologi or science and technology), guided by the principles of rahmatan lil ‘alamin (universal grace). Meanwhile, its mission encompasses fostering Islamic values, hygiene, orderliness, discipline, commitment to learning and productivity, application of Islamic teachings in daily life, encouragement of virtuous deeds and deterrence from wrongdoing, as well as the development of intellectual, spiritual, and emotional intelligence, while keeping abreast of scientific and technological advancements and utilizing IT. In 2006, the school introduced environmental education through the Adiwiyata program or, internationally it recognized as Green School. It aimed to raise environmental awareness and knowledge within school communities for the preservation of the environment. Active participation from every member of the school community is anticipated to foster a healthy environment and mitigate negative environmental impacts. As highlighted by the Ministry of Environment and the Ministry of Education (2011) as cited in Panjaitan (2022), Adiwiyata schools are expected to adopt environmentally conscious policies, implement curriculum based on environmental principles, engage in participatory environmental activities, and maintain eco-friendly facility management. This

program cultivates a culture of environmental stewardship within the school community, fostering awareness of environmental importance and nurturing a green and clean environment.

The primary objective of the Adiwiyata program is to imprint environmental consciousness among school communities, promoting effective environmental management based on sound governance principles to support sustainable development (Fathurrahman et al, 2022). Following the interview with the principal of SD Muhammadiyah 24 Surakarta on October 31 2023, it was clarified that the school's objective is to achieve the title of Sekolah Adiwiyata and has previously undergone assessment. From the interview, SD Muhammadiyah 24 Surakarta encountered several obstacles in the assessment, including (1) lack of preparedness for Adiwiyata accreditation, (2) insufficient support from students and parents and (3) ineffective utilization of ecology-based teaching materials. Alongside the aspiration to obtain the title of Sekolah Adiwiyata, there were observations of various challenges faced by school, such as inadequate readiness of facilities and infrastructure to meet the standards of a green school, weak information systems exemplified by outdated websites, inadequate promotional efforts for the school, substandard administrative management, disorganized financial management still reliant on basic systems, and suboptimal management of student achievements.

Based on what has been described, to help enhance the institutional of SD Muhammadiyah 24 Surakarta in order to obtain the title of "Sekolah Adiwiyata", Community and Development team carried out several programmes to overcome the obstacles mentioned above such as green school workshops, assistance in designing the school website, and providing three-color waste bins. The description and details of each program will be described in the next section of this paper.

2. Literature Review

2.1. Green School

Children spend the majority of their daily lives at school. Therefore, it is essential to incorporate nature-focused designs into schoolyards to increase their daily exposure to green spaces (Borns et al, 2022). Nature-focused design could be in the form of a green school. What we call "green schools" are those that make sustainability a central tenet of their daily work, teaching methods, and outreach to the local community. Green construction principles encompass energy efficiency, water conservation, waste management, and sustainable transportation. In a green school, pupils are taught about sustainability and encouraged to embrace eco-friendly behaviors in a healthy learning environment. Green environment offers various advantages, including positive effects on student's mental health, student's behavior (Vanaken and Danckaerts, 2018), cognitive development and even academic performance (Kweon et al, 2017). For the detail, some benefits of green schools is as follows :

Benefits of a Green School. There are various benefits to green school community development, as follows:

- a. a. Green schools offer educational benefits such as improved learning experiences, academic achievement, health, and economic benefits. Green schools provide hands-on, experiential learning opportunities to engage students and improve their understanding of environmental challenges.
- b. Green schools have been linked to improved academic performance, including higher test scores and fewer absenteeism due to healthier interior settings.
- c. Health benefits from improved indoor air quality: Using non-toxic materials and providing enough ventilation minimizes exposure to pollutants, resulting in fewer respiratory difficulties and diseases. Access to natural light, green spaces, and nutritious food alternatives can improve students' physical and mental health.
- d. Economic benefits include cost savings. energy-efficient technologies and water-saving methods help schools save money on their operations. Investment in sustainable infrastructure frequently results in long-term financial savings. Job Creation: Green school creation and upkeep generate career opportunities in construction, renewable energy, and sustainability education.

The implications of green school.

a) Impact on Society and the Environment: Green schools significantly cut greenhouse gas emissions by utilizing renewable energy, energy-efficient devices, and sustainable transportation. They also promote resource conservation through practices like recycling, composting, and harvesting rainwater, which helps to preserve natural resources and minimize waste.

b) Examples of Societal Impact: Enhancing Environmental Awareness: By teaching students and their families about sustainability, green schools cultivate an environmentally conscious culture within the community. Community Involvement: These schools often serve as centers for environmental initiatives, engaging local residents in sustainability projects and educational activities.

c) Long-term Impact on Future Generations: Green schools equip students with the knowledge to be environmentally aware and to make decisions that positively impact the planet. They embody a comprehensive educational approach that benefits not only

the students but also society and the environment. By nurturing a culture of sustainability, green schools are pivotal in creating a healthier, more sustainable future for everyone.

2.2 Adiwiyata School Program.

The Adiwiyata School Program is a government initiative in Indonesia aimed at promoting environmental education and sustainable practices in schools. Its goal is to foster a learning environment where students, teachers, and the entire school community are actively involved in environmental conservation and management. The program is administered by the Ministry of Environment and Forestry in partnership with the Ministry of Education and Culture.

Objectives of the Adiwiyata School Program

- a) Environmental Awareness: To increase the understanding of environmental issues and the significance of sustainability among students, teachers, and the school community.
 - b) Sustainable Practices: To embed sustainable practices into school operations, including waste management, energy efficiency, and water conservation.
 - c) Curriculum Integration: To make environmental education a key component of the school curriculum.
 - d) Community Engagement: To encourage schools to collaborate with local communities on environmental protection initiatives
- Policy Development:

The Adiwiyata School Program in Indonesia aims to cultivate an environmentally conscious generation by integrating sustainability into the educational system. By following the steps outlined above, schools can effectively participate in the program, contributing to environmental conservation and fostering a culture of sustainability within their communities.

3. Methodology

This article serves as a dissemination of community service outcomes by the community service team from Management UMS. The community service was conducted in Surakarta and SD Muhammadiyah 24 Surakarta as the partner institution and using case study as research design. The community service aimed to strengthen the partner institution's capacity to achieve the title of "Sekolah Adiwiyata". Implemented programs included workshops on green schools, assistance in developing the school website, and the provision of three-color waste bins (organic, inorganic, hazardous). The method for implementing the community service program depicted as follows:

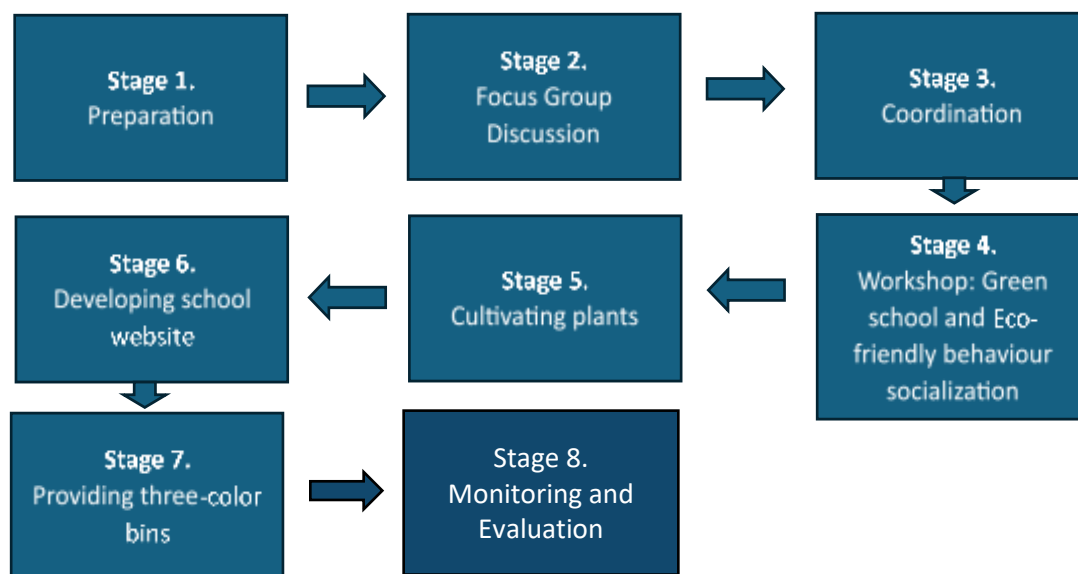


Image 2. Flowchart of implementation method of community development.

The implementation method is divided into 8 stages. The description is as follows:

Stages 1. Preparation and Coordination

At this stage, the service team held a meeting to coordinate internally. After that the service team visited SD Muhammadiyah 24 Surakarta to conduct socialization about the programs implementation and discuss preparations about schedule, PIC, facilities and infrastructure needed.

Stages 2. Focus Group Discussion

At this stage, a Forum Group Discussion (FGD) was carried out between the service team and the management of SD Muhammadiyah 24 Surakarta to formulate problems and analyse appropriate implementation techniques.

Stages 3. Coordination

A coordination meeting was held between the service team and SD Muhammadiyah 24 Surakarta to socialize the program and the time that would be used in implementing the service program.

Stages 4. Workshop: Green school and eco-friendly behaviour socialization

Socializing environmentally friendly behavior in schools is an essential step in forming collective awareness of responsibility towards the environment. Through these activities, schools can become agents of change that motivate students, teachers and staff to adopt sustainable practices. Socialization is not only for students but also for teachers and guardians, which is one of the factors in the development of students' understanding of the importance of environmentally friendly behavior. Human efforts are needed to realize environmentally sound behavior which is important for the realization of Sekolah Adiwiyata (Wijayanti et al., 2021). Also the team held a workshop about green school comprehensively.

First speaker at the workshop and socialization stages are Dr. Rini Kuswati, S.E., M.Si., CMA as the head of Management Study Program UMS who delivered "What is Green School and Why Should Green School ?" and the second speaker is Suryono Arief Wijaya, S.T. as head of "Climate Village Programm - Program Kampung Iklim (proklim)" Sukoharjo and also winner of "Proklm Lestari Nasional" by Ministry of Environment and Forestry of Indonesia in 2020.



Image 3. Green school workshop and socialization

Stages 5. Cultivating

At this stage, students are invited to cultivate plants in order to foster a love of the environment and internalize green behaviour



Image 4. Cultivating plants with students

Stages 6. Developing school website

Assistance in creating a website is one of the programs assisted by the service team in order to facilitate accessibility for the community to the latest information regarding SD Muhammadiyah 24 Surakarta. Apart from that, this website can also be a promotional tool.



Image 5. School Website of SD Muhammadiyah 24 Surakarta, Indonesia.

Stages 7. Providing three-color bins

Providing bins at strategic points in schools plays an important role in creating a clean, comfortable and empowering environment. Strategic placement can increase awareness and involvement of students and staff in environmental cleanliness. Accessible three-color bins school users will be more inclined to throw away rubbish in the right place, reducing the risk of environmental pollution, and creating an atmosphere that supports teaching and learning activities.



Image 6. Handover bins and practicing how to use it correctly

Stages 8. Monitoring and Evaluation

There is a need to carry out monitoring and evaluation after the entire work program is completed. This is to ensure that the work program has a sustainable impact on SD Muhammadiyah 24 Surakarta, especially in behaving greenly and in the long term is an effort to obtain the title of "Sekolah Adiwiyata".

4. Result and Discussion

The community service team from Management UMS, through "Pengabdian Masyarakat Persyarikatan/AUM/Desa Binaan" (P2AD) program, carried out service activities at SD Muhammadiyah 24 Surakarta. The Community Service Team aims to assist in enhancing capabilities from the institutional side, school residents, to parents or guardians of students in internalizing green behavior and realizing a Green School in order to achieve Sekolah Adiwiyata status. Various work programs or activities have been implemented through this Community Service, including Socialization and Workshops with the theme of Green School, planting green plants at the school, providing three-color trash bins, and developing the SD Muhammadiyah 24 Surakarta website. Not only teachers and students, but this community service activity also involves parents or guardians of students and school administrators.

Before determining the work programs for this community service, the community service team first held discussions with SD Muhammadiyah 24 regarding any challenges or problems they were facing or any needs required to support SD Muhammadiyah 24 Surakarta in achieving Adiwiyata School status. This way, the solutions in the form of work programs we implement can be appropriate. To support SD Muhammadiyah 24 Surakarta in achieving "Sekolah Adiwiyata" status, the first work program we implemented was socialization and workshops on Green Schools and why it is important to become a Green School. In this activity, there were two speakers: the Head of the Management Study Program at FEB UMS, Dr. Rini Kuswati, S.E., M.Si., CMA, and Mr. Suryono Arief Wijaya, S.T., a practitioner who has long been involved in the field of climate village programs. In this socialization, the speakers explained what is meant by a green school and what a school needs to prepare to achieve Green School or "Sekolah Adiwiyata" status. In the presentation, it was mentioned that becoming a green school not only involves creating a green and beautiful school environment but also internalizing green behavior into the school curriculum. Thus, all activities at the school are conducted without neglecting the aspect of environmental sustainability.

In this work program, pre-tests and post-tests on the basic knowledge of Green Schools were conducted for the participants of the socialization and workshop. The pre-test aimed to assess the extent of the knowledge that the participants—comprising teachers, administrators, students, and parents—had about Green Schools. The post-test was conducted to determine if there was an increase in knowledge about Green Schools after the presentations by the two speakers. Based on the results of the pre-test and post-test, it was found that the school community of SD Muhammadiyah 24 Surakarta already had substantial knowledge about the Green School concept. However, parents or guardians had lower knowledge about Green Schools. The pre-test and post-test results indicated that some participants showed significant improvement, but for the majority, the change was not very significant because they already had good pre-test scores.

The second work program is Cultivating Green Plants at School. This activity was carried out by the Community Service Team together with the students of SD Muhammadiyah 24 Surakarta. The purpose of this activity is to teach students how to create a green and beautiful school environment. In addition to ornamental plants, SD Muhammadiyah 24 Surakarta also has a hydroponic garden containing vegetables such as watercress and pak choi. Thus, when harvest time comes, these vegetables can be utilized

by the school community. Another program is Developing School Website and Provision of Three-Color Trash Bins at the School. As a support for applying for Adiwiyata School status, one of the required aspects is adequate school facilities for green behavior, including having three-color trash bins (organic, inorganic, or hazardous waste). The availability of these types of trash bins can increase students' awareness and encourage them to practice green behavior by sorting and disposing of waste according to its type. Students also become more knowledgeable about which types of waste can be recycled, which cannot, and which are hazardous materials. In addition to physical facilities like trash bins, the community service team also assisted SD Muhammadiyah 24 Surakarta in developing the school website. The school website is considered an important and easy-to-use medium for the school to disseminate information to the broader community. Along with the website development, the community service team provided guidance for teachers, especially those managing the website, on how to develop and maintain it so that it can continuously enrich school information and upload it to the website.

5 Conclusions

The UMS Management Community Service Team, through the P2AD program, has carried out community service at SD Muhammadiyah 24 Surakarta and implemented several work programs to assist and support SD Muhammadiyah 24 Surakarta in achieving Green School or Adiwiyata School status. The programs that have been implemented include Green School socialization and workshops, planting green plants with students, developing the school website, and providing three-color trash bins for the school. Additionally, during the socialization and workshop, pre-tests and post-tests on Green School were conducted for the participants to assess their knowledge about Green Schools. The results of the pre-test and post-test showed that the participants had good knowledge of Green Schools. Through the work programs implemented by the community service team, it is hoped that SD Muhammadiyah 24 Surakarta—teachers, administrators, students, and parents—can internalize and realize green behavior. The school community is also expected to practice green behavior not only at school but also in their activities outside of school. In the long term, SD Muhammadiyah 24 Surakarta is expected to achieve Green School or “Sekolah Adiwiyata” status.

The shortcomings of this community development program include the lack of preparedness of service partners in advancing the green school initiative. This lack of readiness pertains to the availability of funds, the preparedness of teachers, and the limited time dedicated to discussing green schools in detail. It is recommended that future research, particularly those using a case study approach in elementary schools, should involve actively participants for in-depth interviews to enhance the discussion of community service outcomes.

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References

- [1] Aqilah, S., & 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), 9–15. <https://doi.org/10.61142/esj.v1i1.1>
- [2] Brons, M.E., Bolt, G.S., Helbich, M., Visser, K., and Stevens, G. (2022). Independent Associations between Residential Neighbourhood and School Characteristics and Adolescent Mental Health in the Netherlands. *Health and Place*. Vol. 74
- [3] Choirunnisa, A., & Kuswati, R. (2023). Antecedent of Sustainable Consumption Behavior: Purchase, Using and Disposing.
- [4] Kuswati, R., & Mulati, I. R. (2022). Pengaruh Sikap Lingkungan Terhadap Perilaku Pro Lingkungan yang Dimediasi oleh Kepedulian Lingkungan dan Kemauan Membayar Lebih. *Jurnal Bisnis dan Manajemen (JBM)*, 157-167.
- [5] Kuswati, R. (2023, January). Pengaruh Pengetahuan Lingkungan dan Persepsi Risiko Lingkungan Terhadap Konsumsi Berkelanjutan yang dimediasi oleh Kepedulian Lingkungan. In *Prosiding University Research Colloquium* (548-564).
- [6] Kuswati, R., Purwanto, B. M., & Sutikno, B. (2020). Encouraging pro-environmental behavior through consumer innovativeness. *Advances in Business, Management and Entrepreneurship*, 13-19.
- [7] Kuswati, R., Soepatini, S., & Hidayati, N. (2021). PEMBERDAYAAN UMKM SABUN SUSU PADA KUBBB SEGAR ARUM DI BOYOLALI. *Jurnal Penamas*, 5(2), 50-60.
- [8] Kweon, B. S., Ellis, C., Lee, J., Jacobs, K. (2017). The Link Between School Environment and Students Academic Performance. *Urban Forestry and Urban Greening*. 23, 35-43.
- [9] Noor, M. N. F., & Kuswati, R. (2023, February). The Effects of Environmental Value and Environmental Engagement on Sustainable Consumption Behavior. In *Proceeding Medan International Conference on Economic and Business* (1, 1517-1531).
- [10] Sholahuddin, M., Lestari, W. D., Padmantyo, S., Irawati, Z., Nasir, M., Kuswati, R., ... & Murwanti, S. (2022, July). Penguatan Majelis Ekonomi PCM Jebres Melalui Peningkatan Nilai Produk Pengusaha Binaan PCM Jebres. In *Prosiding University Research Colloquium* (pp. 203-208).
- [11] Vanaken, G., and Dackaerts, M. (2018). Impact of Green Space Exposure on Children’s and Adolescents’ Mental Health : A Systematic Review. *International Journal of Environmental Research and Public Health*. 15(12). 2668.
- [12] Wijayanti, A., Hariiri, H., Karwan, D. H., & Sowiyah, S. (2021). Principal’s Strategies in Realizing Adiwiyata School: A Literature Review. *Eduvest - Journal of Universal Studies*, 1(9), 841–849. <https://doi.org/10.59188/eduvest.v1i9.114>