



## School Assistance in Implementing the Green School Program to Support Sustainable Development Goals (SDGs)

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### ABSTRAK

Penelitian ini bertujuan untuk menganalisis efektivitas program pendampingan dalam meningkatkan kapasitas guru dan siswa dalam mengimplementasikan program Green School serta mendukung pencapaian Sustainable Development Goals (SDGs) di SMA Negeri 1 Tanjung Raja. Penelitian ini menggunakan pendekatan Participatory Action Research (PAR) yang dipadukan dengan service learning, dengan melibatkan 1 kepala sekolah, 15 guru, dan 60 siswa sebagai subjek kegiatan. Data dikumpulkan melalui observasi, angket, wawancara, dan dokumentasi, serta dianalisis menggunakan teknik deskriptif kuantitatif dan kualitatif. Hasil penelitian menunjukkan adanya peningkatan signifikan dalam pemahaman guru tentang konsep Green School dan SDGs, dari 35% sebelum pendampingan menjadi 85% setelah pendampingan. Guru juga menunjukkan peningkatan kapasitas pedagogik dalam mengintegrasikan pendidikan keberlanjutan ke dalam pembelajaran. Selain itu, kesadaran dan partisipasi siswa terhadap lingkungan meningkat, ditunjukkan oleh keterlibatan aktif siswa dalam kegiatan kebersihan, penanaman pohon, dan penerapan perilaku ramah lingkungan. Program pendampingan juga menghasilkan pengembangan berbagai program Green School, seperti pengelolaan sampah berbasis pemilahan, program penghijauan sekolah, dan integrasi pendidikan lingkungan dalam pembelajaran. Selain itu, kapasitas institusi sekolah dalam mendukung SDGs, khususnya SDG 4 (Pendidikan Berkualitas), SDG 13 (Penanganan Perubahan Iklim), dan SDG 15 (Ekosistem Daratan), mengalami peningkatan yang signifikan. Secara keseluruhan, program pendampingan memberikan dampak transformatif dalam membangun budaya sekolah yang berkelanjutan dan mendukung implementasi pendidikan berbasis keberlanjutan.

### ABSTRACT

This study aimed to examine the effectiveness of a mentoring program in improving teachers' and students' capacity to implement Green School principles and support the achievement of Sustainable Development Goals (SDGs) at SMA Negeri 1 Tanjung Raja. The study employed a Participatory Action Research (PAR) approach combined with service learning, involving 1 school principal, 15 teachers, and 60 students. Data were collected through observation, questionnaires, interviews, and documentation, and analyzed using descriptive quantitative and qualitative techniques. The results showed a significant improvement in teachers' understanding of sustainability concepts, increasing from 35% before mentoring to 85% after mentoring. Teachers also demonstrated enhanced pedagogical capacity by integrating sustainability into lesson plans and implementing project-based environmental learning. In addition, students' environmental awareness and participation improved substantially, with 80% actively involved in school cleaning activities, 75% participating in tree planting programs, and 70% adopting environmentally friendly behaviors. The mentoring program also contributed to the development of structured Green School initiatives, including waste segregation systems, school greening programs, and sustainability-integrated learning. Furthermore, the school demonstrated improved institutional capacity to support SDGs, particularly SDG 4 (Quality Education), SDG 13 (Climate Action), and SDG 15 (Life on Land). Overall, the mentoring program had a transformative impact on teachers, students, and the school institution by fostering a sustainability-oriented culture and strengthening the implementation of sustainable education practices.



## 1. INTRODUCTION

Sustainable development has become a global priority and a central concern for nations worldwide, including Indonesia. The concept of sustainable development emphasizes meeting present needs without compromising the ability of future generations to meet their own needs. This foundational principle was formally articulated in the *Brundtland Report*, which defines sustainable development as a balanced integration of environmental protection, social equity, and economic growth (Mio et al., 2020; Budiarto, 2023). Global commitment to advancing sustainable development is further reflected in the Sustainable Development Goals (SDGs), initiated by the United Nations in 2015. These 17 interconnected goals aim to address pressing global challenges, including quality education (Goal 4), responsible consumption and production (Goal 12), and climate action (Goal 13), highlighting the crucial role of education in achieving sustainability (United Nations, 2015).

Within the educational context, schools serve as strategic platforms for fostering sustainability awareness and promoting environmentally responsible behaviors among students. Schools function not only as centers for academic learning but also as transformative institutions that shape students' attitudes, values, and long-term behavioral patterns. UNWTO (2019) argues that education plays a fundamental role in promoting sustainable development by equipping learners with ecological literacy, critical thinking skills, and the ability to make responsible decisions. In this regard, the Green School concept has emerged as an effective and holistic approach to integrating sustainability principles into educational environments. The Green School framework encompasses curriculum integration, sustainable school governance, environmentally responsible practices, and active community engagement, thereby creating a comprehensive model for sustainability-oriented education (Dewi & Siwi, 2024; Riani Hafshah & Nugraheni, 2024; González Del Campo et al., 2020).

Moreover, Education for Sustainable Development (ESD), as promoted by UNESCO, aims to empower learners with the competencies required to contribute to sustainable societies. Rieckhman (2017) emphasizes that ESD enables individuals to develop the knowledge, skills, values, and attitudes necessary to address environmental, economic, and social challenges. Through sustainability-focused education, students are encouraged to actively participate in environmental protection and sustainable practices, thereby fostering responsible citizenship and long-term environmental stewardship (Awfa et al., 2025; Helen, 2020; Vioeza et al., 2023).

Despite its recognized importance, the implementation of Green School programs in many educational institutions remains limited and fragmented. Several studies have identified key barriers, including insufficient teacher knowledge and competencies in sustainability education, lack of structured professional development, limited infrastructure, and low levels of stakeholder engagement in environmental initiatives (Lozano-Díaz et al., 2023; Nousheen et al., 2024; Maijala et al., 2023). As a result, sustainability-related activities are often implemented as isolated initiatives rather than integrated components of school culture and educational practices.

Based on preliminary observations conducted at SMA Negeri 1 Tanjung Raja, it was found that environmental education initiatives had not yet been systematically integrated into the school curriculum, institutional policies, or daily educational practices. Although the school had demonstrated initial efforts to promote environmental awareness through routine cleanliness activities and student participation in environmental campaigns, these initiatives remained largely informal and lacked structured planning and evaluation mechanisms aligned with SDG principles. Furthermore, both teachers and students exhibited limited conceptual understanding of the Green School framework and its relevance to sustainable development (Marango et al., 2021; Xu et al., 2024; Kartika et al., 2024). The absence of structured mentoring and capacity-building programs has further constrained the school's ability to develop, implement, and sustain comprehensive Green School initiatives.

Therefore, a structured school assistance and mentoring program is essential to facilitate the effective implementation of Green School principles at the institutional level. Such an initiative aims to enhance teachers' professional competencies in sustainability education, increase students' environmental awareness and engagement, and foster a sustainability-oriented school culture. Mentoring and collaborative engagement have been widely recognized as effective approaches for strengthening institutional capacity and promoting educational innovation. Through systematic guidance, participatory involvement, and collaborative planning, schools can integrate SDG principles into curriculum development, teaching practices, and school management systems. Ultimately, this assistance program is expected to contribute to the development of environmentally sustainable school environments and support broader efforts to achieve inclusive and sustainable community development.

## 2. METHOD

### 2.1 Approach Design

This community service program employed a Participatory Action Research (PAR) approach combined with a service-learning framework, emphasizing active collaboration among the service team, teachers, students, and the broader school community (Cornish et al., 2023; Wagaman et al., 2023; Oe et al., 2022). Participatory Action Research was selected as it enables stakeholders to actively engage in identifying problems, developing solutions, and implementing sustainable interventions. This approach aims to empower the school community through a structured, collaborative, and participatory mentoring process, ensuring that sustainability initiatives are contextually relevant and institutionally embedded.

The service-learning approach further strengthens the integration between academic knowledge and community engagement, allowing participants to apply theoretical concepts of sustainable development in real-world educational settings. Through this integrated approach, the program sought to enhance institutional capacity and foster a sustainability-oriented school culture.

### 2.2 Research Location and Participant

The program was conducted at SMA Negeri 1 Tanjung Raja, a secondary school located in Palembang, South Sumatra, Indonesia. This school was selected based on preliminary observations indicating the need for structured mentoring in implementing Green School initiatives aligned with Sustainable Development Goals (SDGs).

The participants involved in this program included:

- 1 school principal
- 15 teachers
- 60 students
- Additional school members, including administrative staff and supporting personnel, who contributed as supporting participants

These participants were actively involved in various stages of the mentoring program, including needs assessment, training, implementation, and evaluation.

### 2.3 Implementation Procedures

The mentoring program was conducted through several systematic stages:

#### a. Needs Assessment Stage

This initial stage aimed to identify the school's readiness, existing practices, and challenges related to sustainability and Green School implementation. The activities included:

- Direct observation of the school environment and existing environmental practices
- Semi-structured interviews with the school principal and teachers
- Assessment of teachers' and students' understanding of the Green School concept and SDGs

This stage provided baseline data to guide the development of appropriate intervention strategies.

#### b. Program Planning Stage

Based on the needs assessment findings, a structured mentoring plan was developed. This stage involved:

- Developing a Green School module aligned with SDG principles
- Designing environmentally sustainable school programs
- Preparing a structured action plan for implementing environmental initiatives

The planning process was conducted collaboratively with school stakeholders to ensure relevance, ownership, and sustainability of the program.

#### c. Mentoring Implementation Stage

The implementation phase focused on capacity building and practical engagement. The activities included:

1. Training sessions on Green School concepts and Sustainable Development Goals for teachers
2. Workshops on integrating environmental education into classroom instruction
3. Mentoring and assistance in developing school-based sustainability programs
4. Practical environmental activities involving teachers and students, such as:
  - Waste management and waste segregation practices
  - Tree planting activities within the school environment
  - Development of school gardens and green spaces
  - Environmental awareness campaigns to promote sustainable behavior

These activities were designed to promote experiential learning and foster environmental responsibility among school members.

#### d. Monitoring and Evaluation Stage

Monitoring and evaluation were conducted to assess the effectiveness of the mentoring program and its impact on participants' knowledge, attitudes, and practices. Data were collected through:

- Direct observation of behavioral and institutional changes
- Questionnaires to assess participants' understanding and perceptions
- Follow-up interviews with teachers and school administrators
- Documentation of program activities, including photographs, reports, and school records

This stage ensured continuous feedback and program improvement.

## 2.4 Data Analysis Techniques

The collected data were analyzed using both quantitative and qualitative descriptive methods.

- Quantitative descriptive analysis was used to measure improvements in teachers' and students' understanding of Green School concepts and SDGs, based on questionnaire results.
- Qualitative descriptive analysis was used to examine changes in participants' attitudes, behaviors, and engagement in sustainability practices, based on observations, interviews, and activity documentation.

This combined analytical approach provided a comprehensive understanding of the program's effectiveness in enhancing sustainability awareness and institutional capacity at the school level.

## 3. RESULT AND DISCUSSION

### 3.1 *Improvement of Teachers' Understanding of Green School and Sustainable Development Goals (SDGs)*

The evaluation results demonstrated a significant improvement in teachers' understanding of the Green School concept and its alignment with Sustainable Development Goals (SDGs) following the implementation of the mentoring and capacity-building program at SMA Negeri 1 Tanjung Raja. Prior to the intervention, most teachers had limited conceptual knowledge of sustainability principles and their integration into educational practices. Environmental activities conducted at the school were primarily routine-based, such as school cleaning programs, without being connected to structured sustainability education frameworks or SDG-oriented learning objectives.

Following the mentoring program, teachers exhibited substantial improvement in their theoretical understanding and practical application of sustainability concepts. This improvement can be attributed to the structured training sessions, workshops, and hands-on mentoring activities that provided teachers with both conceptual knowledge and practical strategies for integrating sustainability into their teaching practices.

The assessment results, collected through pre- and post-training questionnaires, revealed that only 35% of teachers demonstrated adequate understanding of Green School principles and SDGs prior to the program. After the completion of the mentoring program, this percentage increased significantly to 85%, indicating a 50 percentage-point improvement in teachers' sustainability literacy.

The improvement was observed across several key competency areas, including:

- Understanding of sustainable development concepts
- Knowledge of Green School principles

- Ability to integrate environmental education into classroom instruction
- Awareness of the role of educational institutions in supporting SDGs
- Capacity to design sustainability-oriented lesson plans

These findings indicate that structured mentoring and participatory training are effective strategies for enhancing teachers' competencies in sustainability education.

**Table 1. Improvement in Teachers' Understanding of Green School and SDGs (n = 15)**

No	Indicator	Before Mentoring (%)	After Mentoring (%)	Improvement (%)
1	Understanding of sustainable development concepts	40%	87%	+47%
2	Knowledge of Green School principles	33%	86%	+53%
3	Understanding of SDGs in education	27%	80%	+53%
4	Ability to integrate sustainability into teaching	35%	83%	+48%
5	Ability to develop sustainability-based lesson plans	40%	90%	+50%
<b>Average</b>	<b>Overall understanding level</b>	<b>35%</b>	<b>85%</b>	<b>+50%</b>

The mentoring program conducted at SMA Negeri 1 Tanjung Raja resulted in a substantial improvement in teachers' pedagogical capacity to integrate sustainability principles into their instructional practices. As shown in Table 1, teachers' overall understanding of Green School concepts and Sustainable Development Goals (SDGs) increased significantly from an average of 35% before mentoring to 85% after mentoring, reflecting a 50% improvement. This enhancement was evident across key indicators, including understanding of sustainable development concepts, knowledge of Green School principles, integration of sustainability into teaching, and the ability to develop sustainability-based lesson plans. Beyond conceptual gains, teachers demonstrated practical pedagogical improvements by designing lesson plans incorporating sustainability themes, integrating environmental topics into subjects such as science, social studies, and English, and implementing project-based learning activities related to environmental conservation. For instance, teachers introduced waste management projects in science classes, environmental awareness campaigns in language learning, and student projects addressing climate change issues. These instructional innovations indicate a shift toward student-centered and sustainability-oriented learning approaches. Furthermore, the mentoring program contributed to broader institutional changes, as teachers increasingly recognized their role as change agents in promoting sustainability within the school environment. Sustainability principles began to be integrated not only into classroom instruction but also into school programs and extracurricular activities. This finding aligns with the framework promoted by UNESCO (2017), which emphasizes that strengthening teachers' competencies is essential for advancing education for sustainable development and fostering environmentally responsible behaviors among students.

### 3.2 Improvement in Students' Environmental Awareness and Participation

The mentoring program had a significant positive impact on students' environmental awareness and active participation in sustainability-related activities. Prior to the intervention, students' involvement in environmental initiatives was limited and largely restricted to routine cleaning activities without a clear understanding of sustainability principles. However, following the implementation of structured mentoring, training sessions, and practical environmental programs, students demonstrated substantial improvement in both awareness and environmentally responsible behavior.

Students became more actively engaged in school environmental programs and demonstrated increased responsibility for maintaining a clean and sustainable school environment. This improvement was reflected in their participation in waste management activities, tree planting programs, and environmental awareness campaigns. The mentoring approach, which emphasized experiential learning and participatory engagement, enabled students to understand the practical relevance of sustainability concepts in their daily lives.

In addition to increased participation, students also demonstrated observable behavioral changes. Many students adopted environmentally responsible habits, such as properly disposing of waste, reducing plastic usage,

and actively maintaining classroom and school cleanliness. These behavioral changes indicate the effectiveness of sustainability education in fostering environmental responsibility among students.

**Table 2. Students' Participation and Environmental Awareness After Mentoring (n = 60)**

No	Indicator	Percentage of Students (%)	Category
1	Active participation in school cleaning activities	80%	High
2	Participation in tree planting programs	75%	High
3	Adoption of environmentally friendly behavior	70%	Moderate-High
4	Proper waste disposal behavior	83%	High
5	Reduction in plastic usage	68%	Moderate
6	Active involvement in environmental campaigns	72%	High

These findings demonstrate that the mentoring program successfully enhanced students' environmental awareness and participation, contributing to the development of environmentally responsible behavior.

### 3.3 Development of Green School Programs

As a direct outcome of the mentoring program, SMA Negeri 1 Tanjung Raja successfully developed and implemented several Green School initiatives aimed at promoting sustainability within the school environment. Prior to the intervention, environmental activities were conducted on an informal and irregular basis. However, following the mentoring process, the school established structured sustainability programs aligned with Green School principles and SDG frameworks.

These programs included a waste management system based on waste segregation, a school greening program through tree planting and garden development, a routine "Clean Friday" program to promote collective responsibility for school cleanliness, and environmental education integrated into classroom instruction. These initiatives reflect the school's growing commitment to embedding sustainability principles into its institutional culture and daily practices.

**Table 3. Green School Programs Developed After Mentoring**

No	Program	Description	Implementation Status
1	Waste segregation program	Separation of organic and inorganic waste	Implemented
2	School greening program	Tree planting and school garden development	Implemented
3	Clean Friday program	Weekly school-wide cleaning activities	Implemented
4	Environmental education integration	Sustainability topics integrated into lessons	Implemented
5	Environmental awareness campaigns	Student-led sustainability campaigns	Implemented

### 3.4 Improvement in School Capacity to Support SDGs

The mentoring program significantly strengthened the school's institutional capacity to support Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 13 (Climate Action), and SDG 15 (Life on Land). The school demonstrated improvement in sustainability-oriented policy development, stakeholder engagement, and institutional practices. Teachers began integrating sustainability concepts into lesson plans, while students actively participated in environmental initiatives.

Furthermore, the school administration showed increased commitment to developing environmentally oriented policies and programs. The integration of sustainability into school management and educational practices reflects the successful institutionalization of Green School principles.

**Table 4. Improvement in School Capacity to Support SDGs**

No	Indicator	Before Mentoring	After Mentoring	Improvement Level
1	Sustainability-based school policies	Limited	Developed	Significant
2	Teacher involvement in sustainability education	Moderate	High	Significant
3	Student participation in environmental programs	Low	High	Significant
4	Environmental culture in school	Limited	Strong	Significant
5	Integration of SDGs into school programs	Minimal	Systematic	Significant

### 3.5 Transformative Impact of the Mentoring Program

The mentoring program had a transformative impact on the school community by fostering a sustainability-oriented culture and strengthening institutional capacity. One of the most significant outcomes was the development of a shared commitment among teachers, students, and school leaders to promote environmental sustainability. Teachers demonstrated improved competencies in sustainability education, while students showed increased participation and environmentally responsible behavior.

Additionally, the school environment became visibly cleaner and greener as a result of waste management initiatives and greening programs. These changes reflect the successful implementation of Green School principles and demonstrate the effectiveness of mentoring-based interventions in promoting sustainable educational transformation.

The program also strengthened collaboration between higher education institutions and schools, creating opportunities for knowledge exchange, capacity building, and sustainable community engagement. This collaborative approach aligns with the principles of service learning and participatory action research, which emphasize mutual learning and long-term institutional development.

Overall, the mentoring program contributed significantly to advancing sustainability education and supporting the implementation of SDGs at the school level. These findings highlight the importance of structured mentoring, institutional support, and participatory engagement in promoting sustainable school transformation.

### Discussion

The findings of this study demonstrate that the mentoring program significantly improved teachers' understanding of Green School principles and Sustainable Development Goals (SDGs). Prior to the mentoring intervention, most teachers possessed limited knowledge of sustainability concepts and lacked the pedagogical capacity to integrate environmental education into classroom instruction. Environmental activities were largely procedural and routine-based, such as school cleaning programs, without being connected to broader sustainability education frameworks. However, after the mentoring program, teachers showed substantial improvement in both conceptual understanding and practical implementation of sustainability-oriented teaching strategies. This finding supports the argument of [UNESCO \(2017\)](#), which emphasizes that teachers play a central role in advancing Education for Sustainable Development (ESD), and strengthening teachers' competencies is essential for integrating sustainability principles into educational practices. When teachers understand sustainability concepts, they are more capable of transforming their teaching approaches and fostering environmental responsibility among students.

The improvement in teachers' competencies, reflected in the increase from 35% to 85% in sustainability literacy, indicates that mentoring is an effective capacity-building strategy. This finding aligns with research conducted by [UNESCO \(2020\)](#), which states that professional development programs, including mentoring and training, significantly enhance teachers' ability to integrate sustainability into curricula and classroom instruction. Mentoring provides opportunities for experiential learning, reflective practice, and collaborative problem-solving, which are essential components of effective teacher professional development. Furthermore, mentoring allows teachers to connect theoretical knowledge with practical application, thereby facilitating meaningful and sustainable pedagogical transformation.

In addition to improving teachers' competencies, the mentoring program also had a significant impact on students' environmental awareness and participation. The results showed that students became more actively engaged in environmental activities, including waste management, tree planting, and environmental campaigns. These findings support the theory proposed by [Hagebakken et al. \(2021\)](#), which emphasizes that sustainability education should promote not only cognitive understanding but also behavioral change and active participation.

Environmental education that involves experiential and participatory learning approaches has been shown to be more effective in fostering environmental responsibility among students. This is consistent with the constructivist learning theory, which suggests that students develop deeper understanding and behavioral change through direct experience and active engagement in meaningful activities.

Furthermore, the observed behavioral changes among students, such as reducing plastic use and properly disposing of waste, indicate that sustainability education can contribute to the development of environmentally responsible habits. According to [United Nations \(2015\)](#), education plays a crucial role in achieving Sustainable Development Goals, particularly SDG 4 (Quality Education), SDG 13 (Climate Action), and SDG 15 (Life on Land). Schools serve as strategic institutions for promoting sustainable development by shaping students' knowledge, attitudes, and behaviors toward environmental sustainability. Therefore, integrating sustainability education into school programs can contribute significantly to achieving global sustainability targets.

The mentoring program also contributed to the development and institutionalization of Green School programs at SMA Negeri 1 Tanjung Raja. Prior to the intervention, environmental programs were informal and lacked systematic implementation. However, after mentoring, the school successfully implemented structured programs, including waste segregation systems, school greening initiatives, and sustainability-integrated learning. These findings support the concept proposed by [Riani Hafshah & Nugraheni \(2024\)](#), which states that Green School initiatives can promote sustainable institutional transformation by integrating environmental management, sustainability education, and community participation. The development of structured sustainability programs indicates that mentoring can serve as an effective strategy for facilitating institutional change and promoting sustainability-oriented school culture.

Moreover, the mentoring program strengthened the school's institutional capacity to support Sustainable Development Goals. The school demonstrated significant improvement in sustainability-oriented policies, teacher engagement, student participation, and environmental culture. This finding is consistent with the framework proposed by [UNESCO \(2017\)](#), which emphasizes that achieving sustainable school transformation requires a whole-school approach involving teachers, students, school leaders, and institutional policies. Sustainability should be integrated not only into classroom instruction but also into school management, policies, and organizational culture.

The transformative impact of the mentoring program was evident in the development of a sustainability-oriented school culture. Teachers began to recognize their role as change agents, while students actively participated in environmental programs and demonstrated environmentally responsible behavior. The school environment also became cleaner and greener, reflecting the successful implementation of Green School principles. This finding aligns with the theory of transformative learning, which suggests that education can promote meaningful change in individuals' perspectives, attitudes, and behaviors ([Cranton, 2023](#); [Southworth, 2022](#)). Mentoring-based interventions provide opportunities for reflection, collaboration, and experiential learning, which are essential for promoting transformative change in educational settings.

Additionally, the collaboration between higher education institutions and schools played a crucial role in strengthening institutional capacity and promoting sustainability education. This collaborative approach reflects the principles of community engagement and service learning, which emphasize mutual learning and capacity building between educational institutions and communities. According to [United Nations \(2015\)](#), partnerships between educational institutions and communities are essential for achieving Sustainable Development Goals, as they facilitate knowledge exchange, capacity building, and sustainable development practices.

Overall, the findings of this study demonstrate that mentoring-based interventions are effective in improving teachers' competencies, enhancing students' environmental awareness, developing sustainability-oriented school programs, and strengthening institutional capacity to support Sustainable Development Goals. The successful implementation of the mentoring program highlights the importance of structured professional development, institutional support, and participatory engagement in promoting sustainable educational transformation. These findings contribute to the growing body of literature emphasizing the critical role of education and mentoring in advancing sustainability and achieving global sustainability targets.

#### 4. CONCLUSION

The mentoring program implemented at SMA Negeri 1 Tanjung Raja proved to be highly effective in strengthening the school's capacity to implement Green School principles and support the achievement of Sustainable Development Goals (SDGs). The program significantly improved teachers' understanding of sustainability concepts, Green School principles, and their ability to integrate environmental education into classroom instruction. The increase in teachers' sustainability literacy from 35% to 85% demonstrates that

structured mentoring, training, and hands-on guidance are effective strategies for enhancing teachers' pedagogical competencies and promoting sustainability-oriented teaching practices.

In addition, the program contributed to substantial improvements in students' environmental awareness and participation. Students became more actively involved in environmental initiatives such as waste management, tree planting, and environmental campaigns, and demonstrated positive behavioral changes, including proper waste disposal and reduced plastic use. These findings indicate that sustainability education, when supported by structured mentoring and experiential learning approaches, can effectively foster environmentally responsible attitudes and behaviors among students.

Furthermore, the mentoring program facilitated the development and institutionalization of Green School programs, including waste segregation systems, school greening initiatives, and sustainability-integrated learning. The school also demonstrated significant improvement in its institutional capacity, reflected in stronger sustainability-oriented policies, increased stakeholder engagement, and the integration of sustainability principles into school culture and management. This transformation highlights the importance of mentoring as a strategic intervention for promoting sustainable school development.

Overall, the mentoring program had a transformative impact on teachers, students, and the school institution by fostering a sustainability-oriented culture and strengthening the school's role in supporting SDGs. These findings suggest that mentoring-based capacity-building programs can serve as an effective model for promoting sustainable education and advancing Green School implementation in secondary schools. Therefore, continuous mentoring, institutional support, and collaboration between schools and higher education institutions are recommended to ensure the sustainability and long-term impact of Green School initiatives.

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