

EXTRACURRICULAR QUALITY MANAGEMENT “TATANEN DI BALE ATIKAN” IN DEVELOPING ENVIRONMENTAL LOVE CHARACTERS IN ELEMENTARY SCHOOLS

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Abstract

This study aims to analyze the quality management of Agriculture-based extracurricular quality in Balé Atikan (TdBA) in fostering the character of love for the environment at SDN Ekologi Kahuripan Padjadjaran, Purwakarta. Tatanen di Bale Atikan (TdBA) is an environment-based character education program developed by the Purwakarta Regency Government which aims to instill the values of love for nature through agricultural practices, waste management, and environmental conservation in educational units which are implemented, one of which is through extracurricular activities. A qualitative approach with a case study method is used to understand in depth the implementation of the program. Primary data was obtained through in-depth interviews, participatory observation, and documentation, while secondary data came from school policies and Regent Regulation No. 103 of 2021. Miles and Huberman's interactive data analysis was used by triangulating sources to ensure data validity. The results of the study show that the TdBA program has been quality-based, with the implementation of the PDCA (Plan-Do-Check-Act) cycle in planning, implementation, evaluation, and follow-up. Key challenges include limited resources and continuity of practice at home. The proposed solutions are integration with the curriculum, external collaboration, and strengthening community involvement, so that the program can become a national model of sustainable ecology-based education. These findings make a significant contribution to the development of an adaptive, participatory, and sustainable ecology-based national education policy, and can be used as a model for the implementation of environmental education in basic education units in various regions.

Keywords: Quality Management; Extracurricular; Tatanén di Balé Atikan; Environmental Love

Abstrak

Penelitian ini bertujuan untuk menganalisis manajemen mutu ekstrakurikuler berbasis Tatanén di Balé Atikan (TdBA) dalam menumbuhkan karakter cinta lingkungan di SDN Ekologi Kahuripan Padjadjaran, Purwakarta. Tatanen di Bale Atikan (TdBA) adalah program pendidikan karakter berbasis lingkungan hidup yang dikembangkan oleh Pemerintah Kabupaten Purwakarta yang bertujuan untuk menanamkan nilai-nilai kecintaan terhadap alam melalui praktik pertanian, pengelolaan sampah, dan pelestarian lingkungan di satuan pendidikan yang diterapkan salah satunya melalui aktivitas ekstrakurikuler. Pendekatan kualitatif dengan metode studi kasus digunakan untuk memahami secara mendalam pelaksanaan program. Data primer diperoleh melalui wawancara mendalam, observasi partisipatif, dan dokumentasi, sementara data sekunder berasal dari kebijakan sekolah dan Peraturan Bupati No. 103 Tahun 2021. Analisis data interaktif Miles dan Huberman digunakan dengan triangulasi sumber untuk memastikan keabsahan data. Hasil penelitian menunjukkan bahwa program TdBA telah berbasis mutu, dengan penerapan siklus PDCA (Plan-Do-Check-Act) dalam perencanaan, pelaksanaan, evaluasi, dan tindak lanjut. Tantangan utama meliputi keterbatasan sumber daya dan kesinambungan praktik di rumah. Solusi yang diusulkan adalah integrasi dengan kurikulum, kolaborasi eksternal, dan penguatan keterlibatan masyarakat, sehingga program dapat menjadi model nasional pendidikan berbasis ekologi yang berkelanjutan. Temuan ini memberikan kontribusi signifikan bagi pengembangan kebijakan pendidikan nasional berbasis ekologi yang adaptif, partisipatif, dan berkelanjutan, serta dapat dijadikan model penerapan pendidikan lingkungan hidup di satuan pendidikan dasar di berbagai daerah.

Kata Kunci: Manajemen Mutu; ekstrakurikuler; Tatanén di Balé Atikan; Cinta Lingkungan

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Introduction

Environmental issues and climate change have become increasingly worrying global challenges. Global warming, air pollution, and ecosystem degradation are increasingly having a real impact on various sectors of life, including education. The world of education is not only responsible for shaping students' academic competencies but also has a strategic role in increasing awareness and concern for the environment. Ecology-based education is believed to be one of the solutions in building collective awareness of environmental sustainability (Sutinah et al., 2024)

In line with this, the Purwakarta Regency Government developed the "Tatanen di Bale Atikan (TdBA)" program as a form of environment-based character education that is integrated into the school curriculum. This program is regulated in Purwakarta Regent Regulation Number 103 of 2021 and aims to instill the values of love for the environment through various ecological-based activities, such as sustainable agriculture, waste management, and school greening (Fauziah et al., 2024). This concept emphasizes experiential learning, where students not only acquire theories about ecology, but are also invited to actively participate in various activities aimed at preserving nature. One form of implementation of the TdBA program is in extracurricular activities. Environment-based extracurricular in elementary school plays an important role in shaping pro-environmental habits, attitudes, and behaviors for students. This program not only aims to increase environmental awareness, but also strengthen the character of environmental love through direct participation in various nature-based activities (Dewi et al., 2024).

Extracurricular program based on "Tatanen di Bale Atikan (TdBA)" at SDN Ekologi Kahuripan Padjadjaran, as realized through the activities of the Independent Generation of Protectors of the Earth and the Homeland (GEMPITA), in line with the spirit of the Independent Curriculum which emphasizes project-based learning, character strengthening, and active participation of students in solving real problems around them. Through activities such as waste recycling, water conservation, and organic farming, students not only learn theoretically, but also experience firsthand the contextual learning process that encourages concern for the environment. Prior to the implementation of the Independent Curriculum, extracurricular programs tended to be formal and less integrated with intracurricular learning, so their impact on student character was limited (Kamila & RM, 2023). However, after the Independent Curriculum was implemented, programs such as GEMPITA got wider space to develop because they were supported by the principle of the Pancasila student profile strengthening project (P5), especially in the dimensions of "global diversity" and "ecological culture." However, the implementation of this program has not been optimal due to various obstacles such as the lack of technical guidelines, limited teacher training, and lack of collaboration between schools and communities. For this reason, systemic support in the form of policies, continuous training, and increased involvement of all school residents is needed so that this environment-based extracurricular program truly becomes an integral part of the quality and sustainable education process

Extracurricular activities have a strategic role in supporting the formation of students' character, especially in the context of the Independent Curriculum which emphasizes contextual and project-based learning. TdBA not only encourages students' active participation in environmental conservation, but also reinforces the values of social responsibility and independence. However, the success of this program is highly dependent on the effectiveness of management and the quality of its implementation in schools. Challenges such as lack of

implementation guidelines, limited resources, and lack of teacher training often hinder the optimal achievement of program objectives. To ensure the sustainability and improvement of program quality, quality management in the implementation of TdBA extracurriculars needs to be carried out systematically and data-based. One approach that can be used is the PDCA (Plan, Do, Check, Act) model developed by W. Edwards Deming (Aggarwal, 2020). This cycle provides a comprehensive framework from planning, implementation, evaluation, to continuous improvement. At the Plan stage, schools design activities based on local needs and potential. The Do Stage includes the implementation of the program with a hands-on and participatory approach to practice. Furthermore, the Check stage is carried out by evaluating the successes and challenges faced in implementation. Finally, the Act stage becomes a forum for adjustments and improvements so that the program can continue to develop optimally and sustainably.

Research on Tatanen-based extracurricular quality management in Bale Atikan (TdBA) in fostering the character of environmental love in elementary schools has been conducted before, such as by (Rukajat et al., 2025) who evaluated the TdBA program using the CIPP (Context, Input, Process, Product) model and found that this program was effective in increasing the environmental awareness of students in Purwakarta. However, the study has not specifically discussed the application of the PDCA (Plan, Do, Check, Act) cycle in the quality management of TdBA extracurricular programs. This research offers novelty by integrating the PDCA model in the management of TdBA extracurricular programs, which is expected to increase the effectiveness of the program in fostering the character of love for the environment among elementary school students. This approach is in line with the findings of Mashaba et al (2022) which show that the integration of environmental education in well-managed extracurricular programs can increase students' awareness of environmental conservation and reduce the negative impacts of climate change. Thus, this research contributes to the development of a more effective and sustainable quality management strategy for environment-based extracurricular programs.

The urgency of research on TdBA Extracurricular Quality Management lies in the potential of this program in building the character of love for the environment systematically and sustainably. With better management, this program can become an ecology-based learning model that can be adapted by other schools in Indonesia. The implementation of structured TdBA-based extracurricular programs can be a real step in preparing a generation that cares more about environmental sustainability and has a high ecological awareness. Therefore, this study will explore how quality management can be optimized in the implementation of TdBA extracurricular at SDN Ekologi Kahuripan Padjadjaran Purwakarta in order to form a generation that is environmentally friendly and responsible for nature.

Research Methods

This study uses a qualitative approach with a case study method, which aims to analyze in depth how Tatanen-based extracurricular quality management in Bale Atikan (TdBA) contributes to fostering the character of love for the environment in SDN Ekologi Kahuripan Padjadjaran, Purwakarta Regency. The qualitative approach was chosen because it allows the exploration of phenomena in a naturalistic way, where researchers act as the main instrument in collecting and interpreting data (Moleong, 2018). Case studies are used because of their contextual and empirical nature, allowing for the analysis of phenomena in real and complex environments (Wahyudin & Bk, 2022). The location of the research was chosen purposively at SDN Ekologi Kahuripan Padjadjaran because this school is a pioneer in the application of

ecology-based education. The research was carried out for four months, from November 2024 to February 2025, with the stages of initial observation, data collection, analysis, and reporting of research results.

The data sources in this study consist of primary and secondary data. Primary data were obtained through in-depth interviews with principals, teachers, students, parents, and ecological consultants, as well as through participatory observation of TdBA extracurricular activities. Meanwhile, secondary data was obtained from official school documents, regional policies related to TdBA, and program evaluation records. The data collection technique involves three main methods: participatory observation, in which the researcher directly observes the implementation of the program in the school environment; semi-structured interviews, which aim to explore the experiences and perspectives of stakeholders regarding the TdBA program; and documentation studies, which are used to reinforce findings from observations and interviews (Sitika et al., 2021). With the combination of these three techniques, the research can dig into the data more deeply and comprehensively.

Data analysis was carried out using an interactive analysis model from Miles and Huberman, which included data reduction, data presentation, and conclusion drawing and verification (Taufik, 2020). Data reduction is carried out by sorting out relevant information, while data presentation aims to identify patterns and meaningful relationships in research. To ensure the validity of the data, this study applies triangulation of sources and methods, member checking, and audit trails to increase the credibility and objectivity of the findings (Ma'mun et al., 2022). With this strategy, the research not only produces valid findings, but can also serve as a reference for other schools in implementing environment-based extracurricular programs more effectively and sustainably.

Results and Discussion

Extracurricular Planning (Plan)

The quality planning of the Tatanén extracurricular program in Balé Atikan (TdBA) at SDN Ekologi Kahuripan Padjadjaran—implemented through the Murangkalih GEMPITA (Independent Generation, Earth and Nation Protector) initiative—is structured using a systematic approach that engages multiple stakeholders, including school leadership, educators, parents, and the local community. This program aims to cultivate students' environmental awareness and responsibility through experiential learning, allowing them to gain hands-on experience in sustainable environmental practices. Anchored in Regent Regulation No. 103 of 2021, TdBA is more than just an extracurricular effort; it is part of a broader educational movement focused on character and ecological values. During the planning phase, the program applies the SADAR model (Survey, Analysis, Design, and Action Plan) to align environmental activities with the specific needs of the school and its surrounding context. The process begins with a situational survey to assess the school's environmental conditions and identify local resources, followed by a SWOT analysis to formulate effective strategies for fostering ecological consciousness among students.

As part of the Grand Design of Dharma Atikan, the program is structured around the integration of three core components: environmental infrastructure, curriculum framework, and school policy. The planning of Tatanén di Bale Atikan (TdBA) encompasses a range of activities such as agriculture, waste management, conservation of natural resources, and environment-driven innovation, which are progressively tailored to suit each grade level. At the Gempita Mula stage (grades 1–2), students are introduced to foundational environmental values through

simple practices like planting seeds and sorting waste. Moving into Gempita Madya (grades 3–4), learners engage in more advanced activities such as composting organic waste and practicing permaculture techniques. By the Gempita Utama level (grades 5–6), students are encouraged to develop innovative environmental solutions, including the creation of liquid organic fertilizer, upcycling projects, and managing local resources collaboratively. The program's planning also incorporates clear success metrics, focusing on ecological literacy, character formation, and the development of 21st-century competencies like critical thinking and eco-innovation. Through a collaborative and sustainability-centered framework, Murangkalih GEMPITA serves as a comprehensive extracurricular model that not only enhances students' environmental consciousness but also fosters strong partnerships among schools, families, and local communities to cultivate a lasting culture of ecological responsibility.

Extracurricular Implementation (Do)

The Tatanén di Bale Atikan (TdBA) program, carried out through the Murangkalih GEMPITA initiative at SDN Ekologi Kahuripan Padjadjaran in Purwakarta, is implemented regularly every Friday from 14:00 to 16:00. Incorporated into the school's extracurricular framework, the program emphasizes the development of students' ecological awareness through hands-on, experiential activities. These activities encompass land cultivation, planting, caring for crops, and harvesting, all integrated with character-building lessons rooted in Pancasila values. Beyond learning about agricultural practices, students actively engage in managing waste, producing organic fertilizers from natural ingredients, and exploring ecosystem functions firsthand. The program is managed by the TdBA Extracurricular Team—comprising a coordinator, homeroom teachers, and subject-specific educators—under the leadership of the school principal. Within this structure, teachers function not only as facilitators but also as mentors, helping students bridge environmental theory with practical, real-world applications.

The implementation of the TdBA program actively engages parents, the school community, and the surrounding environment. Parents play a supportive role by contributing plant seeds, recyclable materials, and participating in harvest-related activities. They are also involved in the Forum Silaturahmi Orangtua (FORSITA) GEMPITA, a platform for dialogue and program evaluation that aims to strengthen parental involvement in environmental education. Furthermore, the program partners with local communities and eco-focused enterprises, offering students enriching experiences through field trips and community-based projects, such as maggot cultivation for producing organic fertilizer and sustainable animal feed. Internally, the program is supported by a student pocket book—resembling a Scout handbook—that documents daily activities and personal reflections. Through this integration of experiential learning, routine practice, and eco-innovation, the TdBA extracurricular initiative not only helps students grasp the significance of environmental sustainability but also fosters essential character traits such as leadership, collaboration, and a sense of responsibility for the natural world.

Extracurricular Evaluation (Check)

The evaluation of the Tatanén di Bale Atikan (TdBA) program at SDN Ekologi Kahuripan Padjadjaran is conducted on a regular basis through various methods, including ongoing monitoring, direct observation, and portfolio-based assessment. These evaluations aim to measure student engagement, the effectiveness of teaching strategies, and the program's overall impact on developing environmental awareness and character. The evaluation process includes a Monthly Evaluation Meeting at the school level, where teachers, the principal, and school committee members collaboratively assess the program's progress. Additionally, Weekly GEMPITA Evaluations are conducted to track students' participation in extracurricular

activities. The evaluation also covers both skill development and affective aspects, focusing on students' growth in agricultural practices, environmental management, and behavioral changes all of which are documented in the GEMPITA pocket book. Furthermore, the portfolio-based assessments include records of harvest results, student-led environmental innovations, and photographic documentation of activities, providing a holistic view of each student's progress. This comprehensive evaluation approach ensures that every student receives a meaningful learning experience while aligning the program with the school's vision of nurturing environmentally conscious future generations.

The evaluation also identified several supporting and inhibiting factors in the implementation of the program. Supporting factors include the full support of principals, teachers, students, and the community, adequate facilities such as school gardens and ecology laboratories, as well as parental involvement in Forsita GEMPITA, which helps strengthen the continuity of habituation at home. However, there are several challenges, such as gaps in student participation, limited facilities for ecological practices, and a lack of sustainability of environmental care habits at home. To overcome this challenge, schools have implemented various strategic solutions, including increasing teacher training, adding facilities through collaboration with external partners, and intensive socialization to parents to support children's environmental habits at home. With a systematic evaluation system and continuous improvement, the Murangkalih GEMPITA program has not only succeeded in increasing students' ecological awareness, but also creating a wider positive impact on the school environment and society.

Extracurricular Follow-up (Act)

Following the evaluation of the Tatanén di Bale Atikan (TdBA) Murangkalih GEMPITA program, several strategic initiatives were undertaken to enhance its effectiveness and ensure long-term sustainability. A key action involved revising the learning materials such as pocket books and instructional modules to better align with the developmental needs of students across different grade levels. Additionally, efforts were made to upgrade supporting facilities, including the provision of appropriate farming equipment, improvements in waste management systems, and the expansion of hands-on practice areas, all aimed at strengthening the experiential learning process.

To strengthen the continuity of learning at home, the school facilitates the Forsita GEMPITA forum, which encourages parental involvement in building students' ecological habits. In supporting students' active involvement, homeroom teachers are provided with specific guidance for intensive mentoring, especially for students who need more attention. The main supporting factors of this program are full support from the school, community involvement, and adequate facilities, while the challenges faced include the gap in student involvement, lack of certain facilities, and still limited ecological habits at home. As a solution, the school integrates this program with the Pancasila Student Profile Strengthening Project, expands cooperation with external institutions, and develops ecological laboratories such as greenhouses, bamboo gardens, and ponds. The Wiyata Mandala program (outing class) is also increasingly optimized to involve parents in environment-based learning. With a commitment to increasing teacher capacity through regular training and sustainable innovation, this program is directed to become a national model for environment-based extracurriculars, support the concept of Education for Sustainable Development, and realize education-based ecotourism schools that can be an example for other regions.

The planning of the Tatanén extracurricular program at Balé Atikan (TdBA) at SDN Ekologi Kahuripan Padjadjaran has been designed with a systematic approach through the SADAR (Survey, Analysis, Design, and Action Plan) method, which ensures that there are quality-based planning stages. The initial step in the form of a survey and needs analysis, which focuses on the social, cultural, and environmental conditions of the school, shows that the program adapts to local challenges and potentials. The formulation of program goals uses the SMART (Specific, Measurable, Achievable, Relevant, and Time-Limited) approach, which ensures that each activity has clear and measurable targets (Maulidayani & Aswaruddin, 2021). In addition, this program is based on Regent Regulation No. 103 of 2021, which provides policy legitimacy in the implementation and evaluation of the program. From the perspective of education quality management, TdBA has integrated the principles of Total Quality Management (TQM), which emphasizes systematic planning, strict supervision, and continuous evaluation to ensure program effectiveness ((Achmad, 2023)). However, despite having a solid planning foundation, the effectiveness of the program is highly dependent on the sustainability of its implementation and the involvement of all stakeholders in its implementation.

On the other hand, even though the planning of this program has been quality-based, there are several challenges that need to be anticipated to be more optimal. One aspect that needs to be strengthened is the standardization of success indicators, especially in measuring changes in students' character and skills. Current program evaluations focus more on student involvement in ecological activities, but need to be strengthened in long-term impact measurement, such as the extent to which students apply the concept of sustainability outside of school. In addition, resource support and the continuity of parental and community involvement are important factors that must be considered so that there is no decline in participation in the future (Sijabat et al., 2022). The integration of this program into the Pancasila Student Profile Strengthening Project (P5) in the Independent Curriculum is a strategic step that can increase the effectiveness and ensure the sustainability of the program. Thus, although the planning of the TdBA program has met the principles of quality management in education, there needs to be a strengthening in monitoring, standardization of success indicators, and sustainability of stakeholder participation to ensure that the program really has a significant impact in shaping the character of love for the environment in students.

The implementation of the Tatacompression program at Balé Atikan (TdBA) Murangkalih GEMPITA at SDN Ekologi Kahuripan Padjadjaran shows alignment with the principle of Total Quality Management (TQM) which emphasizes the importance of active involvement of various stakeholders in improving the quality of education in a sustainable manner (Sallis, 2012). The program runs consistently every Friday from 2:00 p.m. to 4:00 p.m., ensuring a structured and sustainable learning pattern for students. The activities carried out, such as land management, plant planting, waste management, and composting, reflect an experiential learning approach, which allows students to gain a deep understanding through hands-on practice (Lailatussaadah et al., 2023). In addition, this program has been designed to adjust the level of student development through three levels, namely Gempita Mula (grades 1-2), Gempita Madya (grades 3-4), and Gempita Utama (grades 5-6), ensuring a progressive curriculum in accordance with the stages of child development. From the perspective of education quality management, such an implementation structure has met the principles of quality-based program implementation, where consistency of implementation, involvement of all parties, and sustainability of learning are the main factors for the success of the program (Bambang Ismaya et al., 2024).

Although the implementation of extracurricular learning has been quality-based, there are several challenges in implementation that need to be improved so that the effectiveness is more optimal. One of the main challenges is the difference in the level of student involvement, where some students are still not active in activities that require teamwork or direct practice, so there is a need for a strategy to increase student motivation (Tahrim, 2020). In addition, although the program involves the community, the support of facilities and resources is still limited, such as the limitations of practical tools and land that must be used interchangeably. If these challenges are not addressed immediately, gaps in the quality of student learning experiences can occur, which has an impact on the low effectiveness of the program in achieving its goals. As a solution, schools can increase cooperation with external institutions, such as environmental communities and private companies, to support the development of facilities as well as provide additional training programs for students and teachers. Thus, even though the implementation of the TdBA program has referred to the principle of education quality, strengthening in terms of facilities, student motivation, and increasing community involvement still needs to be strengthened so that this program has a wider and sustainable impact.

The evaluation of the Tatacompression program at Balé Atikan (TdBA) Murangkalih GEMPITA has adopted the principle of Total Quality Management (TQM) by implementing the PDCA (Plan-Do-Check-Act) cycle which focuses on continuous quality improvement (Sallis, 2012). The evaluation is carried out systematically and evidence-based through direct monitoring by school principals and teachers, observation of activities, and assessments based on Regent Regulation No. 103 of 2021, with success indicators that include student involvement, the effectiveness of land and waste management, and the formation of environmental care characters. In addition, this evaluation adopts a student portfolio-based method, which allows documentation of learning progress through activity reports, environmental projects, and learning reflections, thus ensuring students not only understand concepts but are also able to apply skills in real life (Jami & Muharam, 2022).

Data-based evaluation through observation, cognitive tests, and analysis of student behavior changes is the main basis for program improvement, ensuring that the program can continue to evolve in accordance with the goals of environmental education. However, several challenges are still faced in its implementation, such as the lack of continuity of habituation at home, which hinders the internalization of environmental values taught in schools, as well as uneven support for parents and the community, so that the impact of the program is not optimal outside the school environment (Priantari, 2021). Evaluation also needs to place more emphasis on measuring long-term impacts, such as how students maintain environmental habits after graduation. As a solution, increasing parental involvement through the Forsita GEMPITA socialization program and discussion forum can strengthen home environmental support for this program (Susperreguy et al., 2021). Thus, although the evaluation of the TdBA program has been carried out with a systematic, data-based, and covering various important aspects, improvements in the continuity of habituation at home, community involvement, and long-term impact measurement still need to be strengthened so that this program is more optimal in shaping the character of love for the environment in students.

The follow-up of the Tatacompression program at Balé Atikan (TdBA) Murangkalih GEMPITA has met the education quality management standards based on the concept of Total Quality Management (TQM) and the PDCA (Plan-Do-Check-Act) cycle developed by W. Edwards Deming as well as the cultural approach of education quality from Edward Sallis (Sutarto, 2015). Program evaluation is carried out on an ongoing basis, which is manifested in

the form of revision of learning materials, improvement of facilities, and intensive assistance for students in need, ensuring consistent and adaptive quality improvement to student needs (Deraman et al., 2022). In addition, the integration of the program with the Pancasila Student Profile Strengthening Project (P5), collaboration with external institutions, and community participation through the Wiyata Mandala program (outing class) show a collaborative approach that is the hallmark of quality-based education (Annisafitri & Toni, 2022). The development of ecology laboratories and school gardens, as well as regular training for teachers, shows systematic efforts to improve student skills and the competence of educators, which is in line with the concepts of Education for Sustainable Development (ESD) and ecology-based education (Malaikosa, 2021). However, although the follow-up of these programs has been quality-oriented, there are still challenges in the continuity of parental involvement, resource availability, and the effectiveness of long-term impact measurement. As a solution, schools need to strengthen community engagement strategies and optimize collaboration-based funding, to ensure that the program continues to run effectively and become a national model for sustainable environment-based education.

Conclusion

The quality management of TdBA-based extracurricular learning collected in the extracurricular activities of Murangkalih GEMPITA has been systematically implemented through the Total Quality Management (TQM) approach and the PDCA (Plan-Do-Check-Act) cycle to ensure the sustainability of the program in fostering the character of love for the environment in students. Program planning is carried out with a SADAR (Survey, Analysis, Design, Action Plan) approach, while implementation is supported by the active involvement of teachers, students, parents, and the community, as well as the use of ecological laboratories and school gardens as experiential learning spaces. Portfolio-based evaluations, observations, and skills and character assessments enable continuous improvement that strengthens program effectiveness. Although it has been running according to quality standards, challenges such as limited resources and continuity of habituation at home still need to be improved through increased collaboration with external institutions and optimization of community support. With a holistic and sustainable approach, the program has the potential to become a national model of ecology-based education, which not only shapes students who care about the environment, but also encourages a broader culture of sustainability within the education ecosystem.

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