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SDG-Based Learning Through the Teaching Assistance Program at SMP 4 Polokarto

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ABSTRACT

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This community service program was conducted to address low student engagement and the limited integration of sustainability values in classroom learning at SMP Negeri 4 Polokarto. The program aimed to improve student engagement and learning outcomes through Sustainable Development Goals (SDGs)-based teaching assistance. A participatory approach was employed by involving university students as teaching assistants who collaborated with teachers in implementing interactive and contextual learning activities. The program was conducted from August 2025 to January 2026 and included classroom teaching assistance, anti-bullying socialization, healthy exercise activities, and waste recycling activities. Data were collected through pretests, posttests, and observations, while learning outcomes were analyzed using percentage gain from pretest and posttest scores. The results showed that students' learning outcomes increased in all classes, with percentage gains ranging from 33% to 78%. Student engagement also improved through more active participation, better classroom interaction, and higher learning motivation during learning activities. In addition, the supporting programs strengthened students' social awareness, physical readiness, and environmental responsibility. Overall, SDGs-based teaching assistance created a more meaningful, contextual, and student-centered learning environment.

INTRODUCTION

In line with efforts to transform higher education in Indonesia, the Merdeka Belajar Kampus Merdeka (MBKM) policy was introduced to encourage direct student engagement in the community, one of which is through teaching assistance programs (Mughtar et al., 2023). In its development, the direction of higher education policy has been further strengthened through the Impactful Diktisaintek paradigm, which emphasizes the tangible role of universities in addressing issues within the community and educational institutions (Fitriana et al., 2025). Through this approach, students serve not only as learners but also as agents of change contributing to the improvement of educational quality.

Education plays a strategic role in improving the quality of human resources, particularly in strengthening students' literacy, numeracy, and critical thinking skills. In 21st-century learning, the learning process is no longer oriented toward one-way knowledge transfer but requires active student engagement through meaningful learning experiences. Student engagement has a positive

correlation with student learning outcomes (Xu et al., 2023). However, various studies indicate that teacher-centered learning results in suboptimal student participation, necessitating more interactive and contextual learning approaches (Khan et al., 2025).

When implemented in educational institutions, teaching assistance serves as a form of collaboration with the potential to improve the quality of learning. Student involvement supports teachers in developing more innovative teaching methods, fosters a more participatory learning environment, and enhances the effectiveness of the learning process in schools (Saputra, 2024). Teaching assistance activities are a form of collaboration that has the potential to improve the quality of learning in schools. Student involvement in learning can help teachers develop more innovative and interactive methods. Research indicates that teaching assistance programs can boost student motivation, active participation, and comprehension through the use of varied teaching methods (Wahyuni et al., 2025). Additionally, student mentoring has been shown to have a positive impact on students' learning activities in the classroom (Nisrin & Adrijanti, 2025).

In today's educational landscape, the challenges faced extend beyond academic aspects to include students' ability to understand various global issues. The Sustainable Development Goals (SDGs) can serve as a learning framework because they align with the current global development agenda (UNESCO, 2020). The implementation of the Merdeka Belajar Curriculum supports the achievement of the SDGs through the development of student-centered, contextual learning that is relevant to real-life situations (Fadil et al., 2023). The application of the SDGs in education aims to enhance students' awareness of sustainability issues in environmental, social, and economic domains, thereby making learning more meaningful and contextual. Various studies show that learning linked to real life can improve student motivation, engagement, and learning outcomes (Anjelita et al., 2025; Mentari & Syarifuddin, 2020).

Based on the results of initial observations at SMP Negeri 4 Polokarto, several issues were identified in the learning process, namely low student participation, the continued use of conventional teaching methods, and the suboptimal integration of sustainability values into the curriculum. Additionally, time constraints and teachers' administrative workload also pose obstacles to developing innovative and interactive learning experiences. These conditions have resulted in learning that has not been fully able to encourage active student engagement and connect the material to real-life contexts.

Although various studies have examined the effectiveness of teaching assistance and SDG-based learning separately, the implementation of teaching assistance integrated with an SDG approach in community service activities at the junior high school level has not yet been widely practiced. These community service activities are carried out through SDG-based teaching assistance by involving students as teacher partners in classroom instruction. Through these activities, it is hoped that learning will become more interactive, contextual, and meaningful, thereby increasing student engagement and understanding.

IMPLEMENTATION METHOD

This community service initiative employs a participatory approach through a teaching assistance program based on the Sustainable Development Goals (SDGs), which is implemented in an integrated manner across various educational and non-educational activities at the school. The program focuses not only on classroom learning but also encompasses character building, digital literacy, health, and students' environmental awareness. The target participants are seventh-, eighth-, and ninth-grade students at SMP Negeri 4 Polokarto, with a total of 116 students. The selection of this target group is based on the need to enhance student engagement, academic understanding, and awareness of social and environmental issues.

The program will be held at Polokarto State Junior High School 4 from August 2025 to January 2026. The materials and tools used include SDG-based teaching materials, interactive learning media, technology tools for managing the school website, as well as tools to support physical activities and environmental management. The stages of the activity implementation are shown in Figure 1.

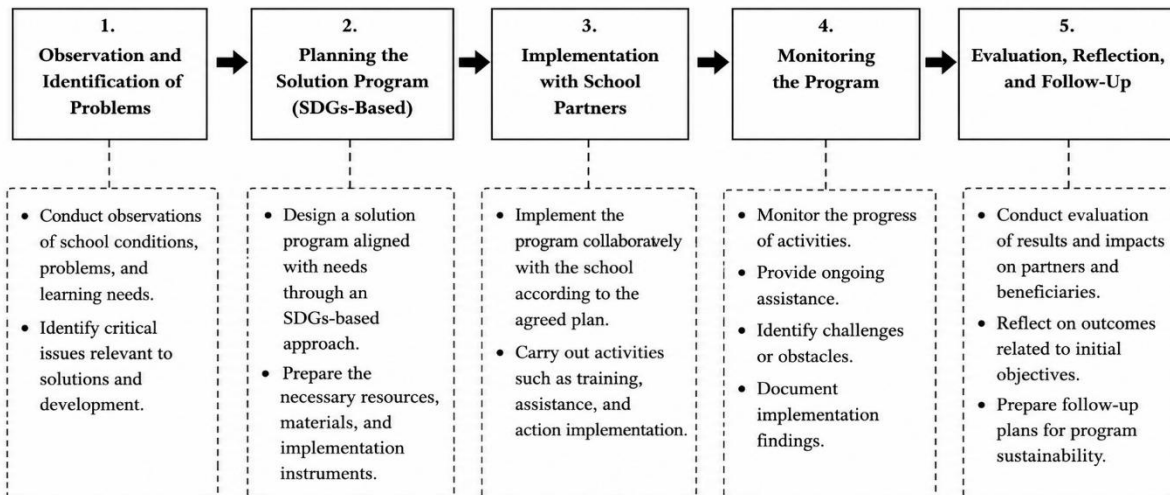


Figure 1. Stages of Activity Implementation

Data collection was conducted through tests and observations. The testing instruments consisted of pretest and posttest questions used to measure students’ understanding before and after the implementation of SDG-based learning. Non-cognitive instruments utilized observation sheets and activity documentation to assess student engagement and responses throughout the program. The aspects observed included participation in discussions, active questioning, cooperation, enthusiasm for participating in activities, social awareness in anti-bullying activities, and environmental awareness through activities involving the reuse of used items. Additionally, activity documentation was used as supporting data to illustrate the program’s implementation and student participation in each activity.

Learning outcome data were analyzed using quantitative descriptive methods by comparing pretest and posttest scores and calculating the percentage increase in student learning outcomes based on gain scores (Hake, 1999). Meanwhile, observational data were analyzed using qualitative descriptive methods by identifying changes in student engagement, participation, social concern, and responses during the activities. The analysis results were used to describe the impact of the SDG-based teaching assistance program on students’ cognitive and non-cognitive aspects.

RESULTS AND DISCUSSION

The implementation of a teaching assistance program based on the Sustainable Development Goals (SDGs) shows that the integration of contextual learning and experience-based activities has a positive impact on student learning outcomes and engagement. The data from the pretest and posttest results for students in each class are presented in Table 1.

Table 1. Student Pretest and Posttest Results

Class	Pretest	Posttest	Percentage Increase
VII	61	81	33
VIII	51	86	69
IX	46	82	78

Based on Table 1 and Figure 1, all classes showed an improvement in learning outcomes following the implementation of SDG-based teaching assistance. Grade 7 saw an increase of 33%, Grade 8 of 69%, and Grade 9 of 78%. The highest increase occurred in Grade IX because students had relatively lower initial scores compared to other grades, yet experienced a significant improvement after the program was implemented. Meanwhile, Grade VII showed a lower increase because students’ initial scores were already relatively higher. Nevertheless, all grades demonstrated a consistent pattern of improvement, indicating that the SDG-based learning approach can be effectively applied across various grade levels.

This improvement in learning outcomes was influenced by the implementation of contextual and student-centered learning. Students not only received theoretical material but also related it to real-life situations through various learning activities. This approach made students more actively engaged during learning activities, thereby enhancing their understanding of the material. These findings align with research indicating that contextual and student-centered learning approaches can enhance student participation and learning outcomes (Konstantinidou & Kyriakides, 2022). Additionally, student engagement across behavioral, emotional, and cognitive dimensions contributes to the overall effectiveness of learning (Wong & Liem, 2022). Teaching assistant support activities create a fresh atmosphere in the classroom by enriching students' learning experiences and contributing to improved collaboration and communication skills (Amien et al., 2024). Learning engagement has a direct relationship with improved learning outcomes, as students who actively participate tend to achieve higher academic performance (Lei et al., 2018).

One of the supporting activities carried out in this program is the anti-bullying awareness campaign shown in Figure 2. The activity was conducted through presentations, interactive discussions, and the presentation of contextual case studies relevant to students' lives. This approach encouraged students to participate more actively in discussions and to feel confident in expressing their opinions during the activity. Anti-bullying programs based on education and active student participation have proven effective in raising students' social awareness within the school environment (Grazia & Molinari, 2023). The internalization of anti-bullying values through character education can foster prosocial behavior and strengthen peer relationships in the learning environment (Jumarnis et al., 2023).



Figure 2. Anti-Bullying Awareness Campaign

The results of the activity indicate that students are beginning to understand the forms of bullying and its impact on the emotional and social well-being of victims. This awareness contributes to the creation of a safer and more comfortable learning environment, enabling students to participate more actively in the learning process. Anti-bullying interventions in schools not only reduce bullying behavior but also improve the school climate and students' overall well-being (Guzman-Holst et al., 2022). A safe learning environment free from bullying allows students to participate more boldly, express their opinions, and interact healthily in the learning process.

In addition to fostering social development, the program also focuses on students' physical health through regular healthy exercise sessions held every Friday. These routine healthy exercise activities make a tangible contribution to students' readiness to learn (Wardani & Syaleh, 2025). The implementation of healthy exercise activities involving students and teachers is shown in Figure 3. This activity involves the active participation of the entire school community, fostering a sense of togetherness and boosting students' spirits before classes begin.



Figure 3. Healthy Exercise Program

Physiologically and psychologically, physical activity through healthy exercise contributes to improved physical fitness, which in turn impacts students' mental alertness. This leads to increased learning readiness, as students become more focused, responsive, and prepared to engage in learning. Physical activity has a positive relationship with improved cognitive function and students' learning concentration (Bedard et al., 2021). Students in better physical condition tend to have higher learning motivation and achieve better academic outcomes (Idham et al., 2022). Thus, students in good physical condition tend to be more effective at receiving and processing learning information, which leads to improved learning outcomes. These findings reinforce the notion that a holistic learning approach one that focuses not only on academic aspects but also on students' physical health and well-being can have a more positive impact on the learning process.

A program for reusing discarded items as a form of environmental education is shown in Figure 4. Activities involving the reuse of discarded items as part of environmental education demonstrate that action-based learning can enhance students' creativity and awareness of sustainability issues. The inorganic waste management program through the reuse of used items was implemented as a strategic effort to instill environmental values while stimulating students' creativity. This activity focuses on transforming post-consumer materials into functional products with new utility. Through this process, students can understand waste management not only theoretically but also practically in their daily lives.



Figure 4. Management of Used Goods

The results of the activity showed that students were actively involved in the process of designing and creating products, which led to increased creativity, a sense of responsibility, and awareness of the importance of environmental management (Rusi et al., 2024). This hands-on experience in solving real-world problems made learning more meaningful and contextual. Activity-based learning and real-world problem-solving significantly enhance student engagement and strengthen conceptual understanding (Ruliani & Harun, 2024). Contextual problem-solving-based learning activities have also been shown to significantly increase student engagement while

strengthening conceptual understanding, as students are directly involved in addressing and resolving real-world problems.

Furthermore, this activity not only has an impact on the cognitive domain but also supports the development of 21st-century skills, such as creativity, collaboration, and social responsibility toward the environment (Pramudiyanti et al., 2024). In the context of SDG-based teaching assistance programs, this activity aligns with sustainable development goals, particularly in promoting responsible consumption and production. Therefore, this program holds strategic potential for further development through integration into a social entrepreneurship-based curriculum, thereby not only enhancing student engagement and understanding but also creating opportunities to generate economic value from the products produced.

In implementing this program, several challenges were identified that require attention. There were significant variations in students' prior knowledge across classes, necessitating dynamic adjustments to teaching approaches, as well as limitations in supporting resources such as teaching aids and access to technology for certain digital-based activities. To address this, students and teachers collaborated to simplify the material according to classroom conditions and utilized simple, easily accessible teaching materials so that all students could participate optimally. Additionally, training for students before they enter the field is necessary to better prepare them to handle classroom dynamics amidst existing limitations (Herianto et al., 2024). Regular coordination between students and mentor teachers is also conducted to ensure the program's adaptation proceeds effectively.

Overall, the SDG-based teaching assistance program has succeeded in creating a more active, contextual, and meaningful learning experience. The improvement in learning outcomes demonstrates that integrating learning with various supporting activities can optimize the overall learning process, both in terms of cognitive and non-cognitive aspects. Thus, the SDG-based teaching assistance program can serve as an effective alternative learning strategy for implementation in schools.

CONCLUSION

The Sustainable Development Goals (SDGs)-based teaching assistance program at SMP Negeri 4 Polokarto has successfully improved student learning outcomes and engagement in the learning process. The improvement in learning outcomes is demonstrated by an increase in post-test scores across all grades: 33% for Grade 7, 69% for Grade 8, and 78% for Grade 9. These results indicate that SDG-based learning, combined with contextual and participatory approaches, is effective in enhancing students' understanding. In addition to improving academic performance, this program also has a positive impact on students' social awareness, health, and environmental consciousness through anti-bullying awareness campaigns, healthy exercise sessions, and the reuse of secondhand items. These various activities help create a more active, interactive, and meaningful learning environment. Thus, the implementation of SDG-based teaching assistance programs can serve as an alternative learning strategy capable of comprehensively improving the quality of education, encompassing both cognitive and non-cognitive aspects.

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REFERENCES

- Amien, M., Bazazi, A. A., Robert, M. H., Jantopal, Valahi, A. D., & Diana, L. M. (2024). Pengabdian Masyarakat melalui Program Asistensi Mengajar di SMK Negeri 1 Sepulu. *Jurnal Pemberdayaan Masyarakat Dan Komunitas*, 1(2), 100–110. <https://doi.org/10.52620/jpmk.v1i2.153>
- Anjelita, N., Aprilianin, V., Saputri, M., & Ardianto, H. (2025). Contextual Teaching and Learning Strategies on Student Engagement. *International Journal of Science and Applied Science: Conference Series*, 9(1), 2549–4635. <https://doi.org/10.20961/ijsascs.v9i1.113282>
- Bedard, C., Bremer, E., Graham, J. D., Chirico, D., & Cairney, J. (2021). Examining the Effects of Acute Cognitively Engaging Physical Activity on Cognition in Children. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.653133>
- Fadil, K., Amran, A., & Alfaien, N. I. (2023). Peningkatan Kualitas Pendidikan Dasar Melalui Implementasi Kurikulum Merdeka Belajar Dalam Mewujudkan Sustainable Development Goal's. *AT-TA'DIB*, 7(2). <https://doi.org/10.32832/at-tadib.v7i2.19512>
- Fitriana, S., Hendrilia, Y., Judijanto, L., Sulaeman, S., & Anwar, R. N. (2025). Transformation of Higher Education Policy: A Literature Study on the Shift from Kampus Merdeka to Diktisaintek Berdampak. *TOFEDU: The Future of Education Journal*, 4(5), 1278–1284. <https://doi.org/10.61445/tofedu.v4i5.554>
- Grazia, V., & Molinari, L. (2023). A Multidimensional Approach to The Study of School Climate and Student Engagement. *The Journal of Educational Research*, 116(6), 386–395. <https://doi.org/10.1080/00220671.2023.2278771>
- Guzman-Holst, C., Zaneva, M., Chessell, C., Creswell, C., & Bowes, L. (2022). Research Review: Do Antibullying Interventions Reduce Internalizing Symptoms? A Systematic Review, Meta-Analysis, and Meta-Regression Exploring Intervention Components, Moderators, and Mechanisms. *Journal of Child Psychology and Psychiatry*, 63(12), 1454–1465. <https://doi.org/10.1111/jcpp.13620>
- Hake, R. R. (1999). *Analyzing Change/Gain Scores*. Indiana University. <http://www.physics.indiana.edu/~sdi/AnalyzingChange-Gain.pdf>
- Herianto, E., Haslan, M. M., Ainun, A., Septiana, E., Aziz, S., Suryani, A. I., Sahira, E., & Novitasari, N. (2024). Meningkatkan Partisipasi Mahasiswa pada Program MBKM Mandiri-Asistensi Mengajar melalui Pelatihan Mandiri Terintegrasi. *Jurnal Gema Ngabdi*, 6(3), 179–194. <https://doi.org/10.29303/jgn.v6i3.534>
- Idham, Z., Neldi, H., Komaini, A., Sin, T. H., & Damrah, D. (2022). Pengaruh Kebugaran Jasmani, Status Gizi, dan Motivasi Belajar terhadap Hasil Belajar PJOK. *Jurnal Basicedu*, 6(3), 4078–4089. <https://doi.org/10.31004/basicedu.v6i3.2196>
- Jumarnis, S. A., Anugerah, J. C., & Sinaga, Y. J. (2023). Strategi Penanaman Pendidikan Karakter Dalam Meminimalisir Bullying Siswa Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6(3), 1103–1117. <https://doi.org/10.31949/jee.v6i3.6398>
- Khan, M., Umar, M., & Ahmad, U. (2025). Factors Influencing Participation of Students in Teaching Learning Process at Undergraduate Level in University of Malakand. *The Critical Review of Social Sciences Studies*, 3(1), 2629–2638. <https://doi.org/10.59075/fmzqvq061>
- Konstantinidou, E., & Kyriakides, L. (2022). Instructional engagement and student learning outcomes: Direct and indirect effects based on country-specific contingencies. *Studies in Educational Evaluation*, 73, 101144. <https://doi.org/10.1016/j.stueduc.2022.101144>
- Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. *Social Behavior and Personality: An International Journal*, 46(3), 517–528. <https://doi.org/10.2224/sbp.7054>
- Mentari, W. N., & Syarifuddin, H. (2020). Improving Student Engagement by Mathematics Learning Based On Contextual Teaching and Learning. *Journal of Physics: Conference Series*, 1554(1), 012003. <https://doi.org/10.1088/1742-6596/1554/1/012003>
- Muchtar, A. A., Wahyudin, Y., Niarrofah, N., & Muthiah, S. (2023). Efektivitas Merdeka Belajar Kampus Merdeka (MBKM) bagi Mahasiswa Program Kampus Mengajar. *Asatiza: Jurnal Pendidikan*, 4(3), 249–258. <https://doi.org/10.46963/asatiza.v4i3.1222>

- Nisrin, M., & Adrijanti. (2025). Strategi Pendampingan Mahasiswa Dalam Asistensi Mengajar Untuk Meningkatkan Aktivitas Belajar Siswa di SMP Negeri 32. *Jurnal Progresif*, 3(2), 1–9. <https://journal.univgresik.ac.id/index.php/progresif/article/view/699>
- Pramudiyanti, D. A., Dahlia, & Purwanto. (2024). Pengembangan Kreativitas Anak Usia Dini Melalui Pendampingan Pemanfaatan Barang Bekas. *Communnity Development Journal*, 5(2), 3234–3241. <https://doi.org/10.31004/cdj.v5i2.26480>
- Ruliani, I. D., & Harun, L. (2024). Penggunaan pendekatan Teaching At The Right Level (TARL) dengan Model Pembelajaran Problem Based Learning (PBL) Sebagai Upaya Meningkatkan Keaktifan dan Hasil Belajar Siswa. *Jurnal Pendidikan Guru Profesional*, 2(2), 150–160. <https://doi.org/10.26877/jpgp.v2i2.1630>
- Rusi, I., Yustosio, D., Angelia Deshka Op Sunggu, F., Putri Aditya, A., & Elsyah Suhardi, R. (2024). Pemanfaatan barang bekas dalam menunjang keterampilan dan kreativitas siswa. *Selaparang: Jurnal Pengabdian Masyarakat Berkemajuan*, 8(1). <https://doi.org/10.31764/jpmb.v8i1.21160>
- Saputra, M. E. (2024). Dampak Program Merdeka Belajar-Kampus Merdeka (MBKM) dalam Meningkatkan Kompetensi Mahasiswa. *Jurnal Kalacakra*, 5(2), 90–99. <https://doi.org/10.31002/kalacakra.v5i2.9288>
- UNESCO. (2020). *Education for Sustainable Development: A Roadmap*. UNESCO. <https://doi.org/10.54675/YFRE1448>
- Wahyuni, S., Lisnawati, W., Agustina Zahro, A., & Masyruroh, F. (2025). Perspektif Guru dan Siswa Terhadap Dampak Program Asistensi Mengajar Pada Motivasi Belajar IPA Siswa SMP. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(04), 313–321. <https://doi.org/10.23969/jp.v10i04.38553>
- Wardani, D. A. K., & Syaleh, M. (2025). Pengaruh Senam Kesegaran Jasmani (SKJ) Pelajar terhadap Tingkat Kesegaran Jasmani pada Siswa Kelas VIII SMP Al Barkah Cinta Rakyat. *Edukatif: Jurnal Pengabdian Masyarakat*, 2(2), 38–43. <https://doi.org/10.55081/edukatif.v2i2.5011>
- Wong, Z. Y., & Liem, G. A. D. (2022). Student Engagement: Current State of the Construct, Conceptual Refinement, and Future Research Directions. In *Educational Psychology Review* (Vol. 34, Number 1, pp. 107–138). Springer. <https://doi.org/10.1007/s10648-021-09628-3>
- Xu, X., Shi, Z., Bos, N. A., & Wu, H. (2023). Student engagement and learning outcomes: an empirical study applying a four-dimensional framework. *Medical Education Online*, 28(1). <https://doi.org/10.1080/10872981.2023.2268347>