



---

## SCHOOL, PARENTS, AND COMMUNITY COLLABORATION IN DEVELOPING STUDENT'S ENVIRONMENTAL AWARENESS

Sigit Priatmoko<sup>1)</sup>, Saidatus Sholihah<sup>2)</sup>

Pendidikan Guru Madrasah Ibtidaiyah, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam negeri Maulana Malik Ibrahim Malang

E-mail: [sigitpriatmoko@uin-malang.ac.id](mailto:sigitpriatmoko@uin-malang.ac.id), [18140113@student.uin-malang.ac.id](mailto:18140113@student.uin-malang.ac.id)

---

Submit: 22 August 2023, Revision: 18 October 2023 Approve: 25 November 2023

---

### Abstract

Currently, environmental damage has become a global issue that urgently needs to be resolved. One of the ways to prevent environmental damage is to develop environmental awareness within students. This strategy requires strong collaboration between schools, parents, and the community. The aims of this study was to find out the collaboration between schools, parents, and the community in developing students' environmental care attitudes. This study employed case study design. The process of collecting data using semi structured interview, non-participant observation, and documentation. Data analysis through several stages, namely data collection, data condensation, data display, and drawing conclusions. The validity of the data was obtained through source and method triangulation and member checks. The results of the study show that schools, parents and the community take on their respective roles according to their main duties and functions. At the planning stage, the school acts as an initiator, parents and the community help provide suggestions. At the implementation stage, the school acts as the primary responsibility, parents as student assistants, and the community as school partners. At the evaluation stage, the school organizes the process and parents help through the behavior checklist sheet. Finally, at the follow-up stage, schools and communities collaborate to improve program quality, while parents accompany students during follow-up activities.

**Keywords:** Environmental Awareness, Elementary School, Environmental Education, Nature school.

**Pengutipan:** Priatmoko, Sigit & Saidatus Sholihah. (2023). School, Parents, and Community Collaboration in Developing Student's Environmental Awareness. *JMIE: Journal of Madrasah Ibtidaiyah Education*, 7(2), 2023, 70-80. [jmie.v7i2.560](https://doi.org/10.32934/jmie.v7i2.560).

**Permalink/DOI:** <http://dx.doi.org/10.32934/jmie.v7i2.560>

---



## INTRODUCTION

Promoting environmental awareness is an important issue in the contemporary educational context (Hadzigeorgiou & Skoumios, 2013). The importance of this issue lies in human dependence on nature. Humans have now realized the importance of preserving nature to support sustainable living. As we know, the destruction of nature that occurs in almost all parts of the world today is largely caused by human actions. As an example, more than 171 trillion pieces of plastic are now floating in the world's oceans. The concentration of plastic in the oceans has increased from 16 trillion pieces in 2005. If conditions continue, this figure will triple by the year (Rannard, 2023; Whiteman, 2023). In the Indonesian context, environmental problems are also increasingly worrying (Nurwidodo et al., 2020). Thus, promoting environmental awareness through education can help us preserve the environment (Hadzigeorgiou & Skoumios, 2013).

According to Sukma et al. (2020), the majority of teachers consider the promotion of environmental awareness is important for primary school students. This positive response is a valuable opportunity to strengthen environmental awareness. The support of school programs, such as *Adiwiyata*, has also shown a positive impact on strengthening environmental awareness (Nurwidodo et al., 2020). Fisman's (2005) investigation also showed that the implementation of the Open Space as a Learning Place program had a positive influence on students' environmental awareness and knowledge of environmental concepts. Meanwhile Altikolatsi et al. (2021) showed that families also take an important role in fostering environmental awareness. These findings show the importance of collaboration between schools, parents and communities in strengthening environmental awareness.

One of the schools that is concerned with developing environmental awareness is the Baipas Madrasah Ibtidaiyah (MI) Malang. MI Baipas Malang involves parents to guide students in environmental care activities such as planting plants at home such as medicinal plants, besides that parents also take part in supervising students' habit of caring for, protecting the environment around the house, processing crops or cooking together (kale, catfish, and green beans). Apart from that, MI Baipas Malang also works with school committees in the form of committee cooperation such as a conservative canteen, namely a canteen that sells healthy and nutritious food for students. The canteen is managed directly by teachers and the community around the school. With this program, it can guarantee the safety and cleanliness of food sold in the school environment.

Research on environmental awareness continues to increase year after year (Jayadinata et al., 2021). Azmi and Elfayetti (2017) found that the *Adimiyata* program contributed positively to increasing students' environmental awareness. However, even though the environmental care attitude score is high, it is not necessarily aligned with the conation aspect. Research by Narut and Nardi (2019) shows that cognitive and affective factors do not necessarily affect student conation. Even though students have awareness (cognition) and feelings (affection) related to environmental problems, this is not seen in daily behavior (conation). Meanwhile, according to Handayani & Sopandi (2016), one of the learning models that can be used to increase environmental awareness is Problem Based Learning (PBL). Apart from PBL, the Service-Learning Model is also proven to be able to increase students' environmental awareness. This is because students are faced directly with real problems (Kasi, K., Sumarmi, S., & Astina, I. K., 2018).

The previous studies above have not focused on collaboration between schools, parents and the community in building students' environmental awareness. Even though these three components of education play an important role and are interrelated with one another (Hill, N. E., 2022). Without the support of parents and the community, a good school program will not run optimally. As shown by Altikolatsi et al. (2021), family members have a greater influence on students' recycling behavior than school programs.. Therefore, this study intends to fill this gap by investigating in depth how the three components of education collaborate in building students' environmental awareness. We hope that the results of this study can become an empirical and theoretical reference in improving the quality of environmental education.

## METHODS

This research employs a case study design with the main focus of investigating the collaboration of schools, parents and communities in building students' environmental awareness. Informants in this study included school principals, four teachers, four students, one school committee member, and three parents. Thus, the number of informants in this study were 14 people. The key informant in this study was the principal as the owner of educational policy authority in the MI Baipas Nature School Malang. While the non-key informants are teachers, students, parents, and the community. Data collection uses non-participant observation techniques, semi-structured interviews, and documentation. Observation sheets, interview guidelines, and documentation sheets were developed based on indicators of environmental care developed by the Ministry of Education and Culture through the Curriculum Center for Research and Development). During data collection, researchers conducted an analysis by following the Interactive Model developed by Miles and Huberman (2014) as a guide in analyzing data. There are three stages of data analysis in this study, namely

data condensation, data display, and drawing conclusions. We have used data using source triangulation, method triangulation, and member checks to check the validity of the data. Triangulation has been viewed as a qualitative research strategy to test validity through the convergence of information from different sources (Triangulation, 2014). In source triangulation, we compare data from one informant with another. In method triangulation, we compared interview data with observation and documentation data. While, in member check, we confirmed the truth of the data to the informants.

## RESULTS AND DISCUSSION

### Environmental Awareness Development Programs

MI Baipas Malang was founded in 2017. This school has the concept of natural school education to shape the attitude and character of caring for the environment. This is in line with one of the legal bases for an independent curriculum which is based on the decision of the Minister of Research, Technology and Higher Education No. 56 of 2022 where each education unit needs to develop a curriculum with the principle of diversification in accordance with the conditions of the education unit, regional potential, and students (Khoirurrijal et al., 2022). The environmental care program developed by MI Baipas Malang is based on their vision, namely "Preparing a generation of Muslims with noble morals. Knowledgeable and responsible, environmentally sound and a blessing to the universe." Two of the school's missions show concern for the environment, namely (1) creating a green and sustainable school environment; (2) instill an attitude of concern for the environment. This vision and mission are translated into concrete form through two types of pedagogic activities, namely intra-curricular, co-curricular, and school regulations.

In intracurricular activities, there are three efforts made by MI Baipas Malang. First, integration with learning materials. Integration is carried out starting from the preparation of the Learning Implementation Plan (RPP). Teachers incorporate learning activities and materials that enable students to understand and increase environmental awareness. Second, the application of Contextual Teaching and Learning (CTL). One form of implementing CTL is that the teacher invites students to practice the 3R (Reuse, Reduce, and Recycle). In addition, students are also taught how to sort waste and learn how long it takes to decompose waste naturally. When observing the environment, the teacher forbids students to carelessly pick flowers or plants without the owner's permission. Third, making handicrafts from used goods and natural materials such as leaves and seeds for collage. This effort was carried out in the subject of Cultural Arts and Crafts.

There are seven co-curricular activities at MI Baipas Malang which are concerned with the formation of environmental awareness. First picket cleanliness. This activity aims to give students responsibility for the environment around them. Students who get a picket schedule

are required to clean the classroom, the blackboard, arrange sandals, and ensure that class members don't litter. Second, invite students to plant at the beginning of a new teaching. This activity is a routine program for MI Baipas every time a new school year is started. Students are invited to plant easy-care plants such as kale. Third, harvest and eat the harvest together (Figure 1). Not only planting and tending, students are also involved in harvesting plants. After harvesting, students are asked to bring vegetables home and cook them at home with their parents. The results of the cooking are brought to school to be eaten together.



**Figure 1. Students Harvesting Kale**

Fourth, Peak Theme activities go to nature tourism. For example, the theme peak activity was carried out at Dolan Park, Batu City, Mount Bromo, Bali and Yogyakarta. Fifth, clean Friday activities once a month. Students work together to clean up the school environment (Figure 2). Fifth, Cultivation of Morning Morals (PAP). This activity takes the form of a Seven Minute Lecture (Kultum) after the Dhuha Prayer in congregation. The teacher gives a religious lecture containing moral messages about ethics towards others and nature.



**Figure 2. Clean Friday Activities**

The implementation of the intracurricular and co-curricular activities above is supported by the existence of school regulations that prevent students from polluting the environment. In the disciplinary document it is stated that disposing of trash in the wrong place will get point 5 with a penalty of writing and reading istighfar 50 times. MI Baipas Malang gives strict sanctions (takzir) to students who are caught littering. The forms of sanctions vary depending on the severity of the violation. For minor violations, for example, students are told

to read sholawat or short letters. If the violation is serious, students are ordered to clean the classroom or locker.

Through school programs that emphasize the habituation of students to always care about the surrounding environment, such as the habit of disposing of trash in its place, planting trees, and caring for animals, this will shape the character of students who care about the preservation of the surrounding environment. As stated by Fitri, the character or character of students can be formed through active activities or efforts by forming a habit in education at school so that it will form the character of students from an early age (Fitri, 2013).

Environmental awareness is an attitude or action that seeks to prevent damage to the surrounding natural environment and seeks to repair the natural damage that has occurred (Narut & Nardi, 2019). Protecting and preserving the natural environment is one of the main tasks of humans, because all of this universe was created to be used and utilized by humans properly and as a means of worship and closer to Allah (Ariyunita, 2019). However, if humans use natural resources exploratively and in a way that is not good then it can endanger humans and their environment because of the damage to nature that occurs. According to Ariyunita, one of the ways to fix the environmental crisis is through educational efforts with an understanding of environmental care from an early age (Ariyunita, 2019).

Environmental awareness has a goal to adjust, equalize and harmonize between humans and nature so as to create a comfortable living environment. In line with this opinion, according to Istiqomah, caring for the environment is a feeling that a person has to improve and manage the environment properly so that the benefits can be enjoyed continuously without damaging it (Istiqomah, 2019). An attitude of caring for the environment based on three approaches to strengthening character education (PPK) launched by the Ministry of Education and Culture can grow and develop through class-based, school-culture-based and community-based activities (Kemendikbud, 2018). Therefore, teachers need to accompany students in every activity to develop students' environmental care attitudes through the learning process.

### **School, Parent and Community Collaboration**

Education is a shared responsibility between all parties, from the government, foundations, schools, teachers to parents and the community (Maryati, 2007). In this case, according to Nasution, society is the third learning environment after school and family. In addition, the existence of school education institutions is largely determined by the participation of the existing community. Without the support and participation of the community, education cannot grow and develop as expected (Nasution, 2015). Meanwhile, according to Habullah in Education, the community has an important role in several matters such as involvement in the establishment and financing of schools, supervisory functions, provision of places, even in this case the community is also a source of learning (Habullah, 2012).

The collaboration between schools, parents and the community that was carried out at the MI Baipas natural school is a form of tricenter application of the concept of education put forward by Ki Hajar Dewantara. In the educational tricenter which includes the family, school and community environment, synergies must be made to achieve the success of the educational process. Ki Hajar Dewantara emphasized that learning objectives are not only achieved through one path. Therefore, the tricenter of education must be closely related and harmonious. The family environment is the most important educational center capable of providing religious education, manners, and social behavior. Schools are wiyata halls that provide skills and knowledge education. And society as a place for children to practice forming their character or character and personality (Untari, 2020).

Schools, parents and communities have their respective roles in developing environmental awareness. In the planning process (Plan), the school acts as initiator, person in charge and program planner for learning activities in accordance with the curriculum applied and to achieve learning objectives. This is in line with the function of schools as educational planning according to Albab which states that schools are initiators, responsible for determining policies that can be carried out together according to their respective main tasks (Albab, 2021). Parents and the community through the school committee provide suggestions and input on the planned activities planned by the school, for example when a school is planning a theme highlight activity, the school asks parents for advice in determining the location for the theme highlight activity. In addition, parents are also involved in planning the budget that will be used in the theme's top activities.

At the Implementation (Do) stage, schools have a major role as providers of facilities, executors of activities that determine the success of the planned program. The school acts as a place of direct learning and the process of knowledge transfer occurs between students and teachers. In addition, the school, in this case the teacher, also functions as a facilitator and at the same time guides students in learning activities. Schools as implementers of activities play a role in providing services including the availability of facilities to facilitate learning activities and teachers as facilitators are to assist and guide students to understand subject matter (Srirahmawati, 2021). For example, in the activities of planting and caring for plants that are carried out outside the classroom at MI Baipas Malang nature school, they provide planting media and seeds, and the teacher guides and teaches directly how to properly plant and care for plants. In addition, for example, during class picket activities until Friday, the school, in this case the teacher, acts as a mentor as well as a role model in clean living behavior and protecting the environment.

At the Evaluation (Check) stage the school acts as a compiler of evaluation instruments and models as well as the implementation of learning evaluations that will be carried out. Evaluation is needed to see the results and achievements in the learning process (Ratnawulan &



Rusdiana, 2015). At MI Baipas Malang natural school, parents also have a role in learning evaluation. Each parent is given assistance and to evaluate students using the checklist contained in the thematic book. After carrying out the activity checklist, each parent will report the results of the evaluation that has been obtained. In addition to the checklist carried out by parents, students are also given a personal checklist to be able to assess themselves.

After the evaluation (check) is carried out, there must be follow-up (Action) from the evaluation results obtained and to interpret the planned learning activities that will be carried out next. In providing follow-up on the evaluation results, you should pay attention to the quality and needs of the follow-up that will be provided so that further learning activities are better than before (Yuliananingsih, 2020). One form of follow-up carried out by MI Baipas Malang nature school is in the learning process of planting and caring for plants. At the beginning of its establishment, MI Baipas Malang natural school had a large area of land for farming, but as time went on and the number of students at the school increased, the land became narrower because new classrooms were built. So that learning can continue to run smoothly as planned, the natural school MI Baipas Malang is collaborating with the dolan park educational tour located in the tourist city of Batu. In these places taught about planting and caring for plants by experts directly. From this follow-up activity (Action) there is a synergy where the school acts as an activity planner, parents as activity companions and the community as a provider of places as well as a source of direct learning.

Based on the explanation above, the existence of synergy between schools, parents, and the community is very important in relation to developing an attitude of caring for the environment. In this case schools, parents, and the community have roles according to their respective functions. Based on research at the MI Baipas nature school in Malang, which has a very large role in efforts to develop an attitude of caring for the environment in students, it is the school, in this case teachers and parents who always communicate actively to monitor student development. While the community has a role and function as a supporter in the implementation of learning activities carried out outside the school.

The impact that emerges is that students show environmental awareness at home, students understand the importance of being responsible for the tasks that must be done to protect the environment. This is evidenced by the ongoing picket cleaning activities in class, not littering and not damaging school plants. Students are able to apply an attitude of caring for the environment at home, including planting medicinal plants, caring for plants, cleaning the house. Students are able to apply an attitude of caring for the environment in society through mutual cooperation activities to clean the surrounding environment. This finding corroborates the research of Lin et al. (2022) that action-oriented environmental education has a positive impact on students' environmental awareness. Action-oriented environmental education refers to an active learning strategy that encourages students to adopt environmentally friendly behaviors,

collaborate to directly address environmental issues, and persuade others toward improving environmental awareness (Lin et al., 2022).

## CONCLUSION

MI Baipas Malang Nature School has various strategies to develop environmental awareness. Some of them are the integration of environmental care character programs with lesson plans, Clean Friday Programs, Top themes, School regulations, and school facilities. MI Baipas Natural School collaborates with parents and the community in implementing these strategies. Parents of students are tasked with providing oversight of the implementation of tasks from the school which are the responsibility of students at home, the school works with the surrounding community to form a Conservative Canteen. Thanks to this collaboration, students are able to cultivate an attitude of caring for the environment through the habits taught at school to be carried out at home. Students understand the importance of protecting the environment. This is evidenced by the ongoing picket cleaning activities in the classroom. Students are able to apply an attitude of caring for the environment school which includes not littering, carrying out picket cleaning activities, not damaging school plants. Students are able to apply an attitude of caring for the environment at home, including planting medicinal plants, caring for plants, cleaning the house. Students are able to apply an attitude of caring for the environment in society through mutual cooperation activities to clean the surrounding environment.

## REFERENCES

- Albab, U. (2021). Perencanaan Pendidikan dalam Manajemen Mutu Terpadu Pendidikan Islam. *Jurnal Pancar: Pendidik Anak Cerdas Dan Pintar*, 5(1), 119–126.
- Ariyunita, N. (2019). Implementasi dan Pembiasaan Karakter Kepedulian Lingkungan dalam Pembelajaran PAI di MAN Yogyakarta II. *Tarbawi: Jurnal Pendidikan Islam*, 16(1). <https://doi.org/10.34001/tarbawi.v16i1.1003>
- Astina, K. K., Komang, & Sumarmi. (2018). Pengaruh model pembelajaran service learning terhadap sikap peduli lingkungan. *Jurnal Pendidikan Teori, Penelitian, Dan Pengembangan*, 3(4), 437–440.
- Altikolatsi, E., Karasmanaki, E., Parissi, A., & Tsantopoulos, G. (2021). Exploring the factors affecting the recycling behavior of primary school students. *World*, 2(3), 334–350.
- BBC. (2023, May 18). Plastic pollution: UN says plastic waste could be cut by 80% by 2040. *BBC*. <https://www.bbc.co.uk/newsround/65625161>
- Fisman, L. (2005). The Effects of Local Learning on Environmental Awareness in Children: An Empirical Investigation. *The Journal of Environmental Education*, 36(3), 39–50. <https://doi.org/10.3200/JOEE.36.3.39-50>

- Fitri, A. Z. (2012). Pendidikan Karakter Berbasis Nilai dan Etika di Sekolah. Jogjakarta: Ar-ruzz Media
- Hadzigeorgiou, Y., & Skoumios, M. (2013). The Development of Environmental Awareness through School Science: Problems and Possibilities. *International Journal of Environmental and Science Education*, 8(3), 405–426.
- Handayani, D., & Sopandi, W. (2016). Penggunaan Model Problem Based Learning untuk Meningkatkan Kemampuan Memecahkan Masalah dan Sikap Peduli Lingkungan Peserta Didik. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, 7(2), 105. <https://doi.org/10.17509/eh.v7i2.2702>
- Hill, N. E. (2022). Parental involvement in education: Toward a more inclusive understanding of parents' role construction. *Educational Psychologist*, 57(4), 309-314.
- Istiqomah, I. (2019). Sikap Peduli Lingkungan Peserta Didik di MAN-1 Pekanbaru Sebagai Sekolah Adiwiyata. *Dinamika Lingkungan Indonesia*, 6(2), 95. <https://doi.org/10.31258/dli.6.2.p.95-103>
- Jayadinata, A. K., Hakam, K. A., Munandar, A., Subarjah, H., Julia, J., & Supriyadi, T. (2021). Analysis of 2010-2019 trends of environmental awareness publication using vosviewer application. *Journal of Physics: Conference Series*, 1987(1), 012053. <https://iopscience.iop.org/article/10.1088/1742-6596/1987/1/012053/meta>
- Kasi, K., Sumarmi, S., & Astina, I. K. (2018). Pengaruh model pembelajaran service learning terhadap sikap peduli lingkungan. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 3(4), 437-440.
- Khoirurrijal, Fadriati, Sofia, Makrufi, A. D., Gandi, S., Muin, A., Tajeri, Fakhruddin, A., Hamdani, & Suprapno. (2022). Pengembangan Kurikulum Merdeka (Cetakan I). CV. Literasi Nusantara Abadi.
- Lin, W.-C., Nguyen, L.-H.-P., Tran, N.-H., & Huang, C.-F. (2022). Impact of an action-oriented environmental education course on students' environmental awareness. *Applied Environmental Education & Communication*, 21(4), 331–347. <https://doi.org/10.1080/1533015X.2022.2099482>
- Maryati. (2007). Sekolah Alam, Alternatif Pendidikan Sains Yang Membebaskan Dan Menyenangkan. *Juridik Kimia, FMIPA, UNF*, 6(1), 179–189.
- Narut, Y. F., & Nardi, M. (2019). Analisis Sikap Peduli Lingkungan Pada Siswa Kelas VI Sekolah Dasar di Kota Ruteng. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 9(3), 259–266. <https://doi.org/10.24246/j.js.2019.v9.i3.p259-266>
- Nasution, E. (2015). Penguatan Tiga Pilar Pendidikan di Era Globalisasi. *Dialektika*, 9(2), 85–95.
- Nurwidodo, N., Amin, M., Ibrohim, I., & Sueb, S. (2020). The role of eco-school program (Adiwiyata) towards environmental literacy of high school students. *European Journal of Educational Research*, 9(3), 1089–1103.
- Putra, E. P. (2023, January 13). Tingkat Daur Ulang Sampah Plastik di Indonesia Masih Rendah. *Republika*. <https://news.republika.co.id/berita/rodgy1484/tingkat-daur-ulang-sampah-plastik-di-indonesia-masih-rendah>

- Rannard, G. (2023, March 8). Oceans littered with 171 trillion plastic pieces. *BBC*.  
<https://www.bbc.com/news/science-environment-64889284>
- Ratnawulan, E., & Rusdiana, A. (2015). Evaluasi Pembelajaran | Perpustakaan FIS (Cetakan I). Pustaka Setia. [http://library.fis.uny.ac.id/opac/index.php?p=show\\_detail&id=6279](http://library.fis.uny.ac.id/opac/index.php?p=show_detail&id=6279)
- Srirahmawati, I. (2021). Peran Guru Sebagai Fasilitator dalam Mengasah Penalaran Matematika Siswa SDN 29 Dompu Tahun Pembelajaran 2020/2021. *Ainara Journal (Jurnal Penelitian Dan PKM Bidang Ilmu Pendidikan)*, 2(2), 114–123. <https://doi.org/10.54371/ainj.v2i2.40>
- Sukma, E., Ramadhan, S., & Indriyani, V. (2020). Integration of environmental education in elementary schools. *Journal of Physics: Conference Series*, 1481(1), 012136. <https://iopscience.iop.org/article/10.1088/1742-6596/1481/1/012136/meta>
- Triangulation, D. S. (2014). The use of triangulation in qualitative research. *Oncol Nurs Forum*, 41(5), 545–547. [https://www.researchgate.net/profile/Harasit-Paul/post/Triangulation\\_of\\_data\\_sources\\_in\\_qualitative\\_research\\_Do\\_you\\_consider\\_it\\_mixed\\_methods\\_research\\_and\\_why\\_whether\\_its\\_a\\_yes\\_or\\_no/attachment/5f54865e6a5a0300017ce1f9/AS%3A932660260114433%401599374942659/download/carter2014.pdf](https://www.researchgate.net/profile/Harasit-Paul/post/Triangulation_of_data_sources_in_qualitative_research_Do_you_consider_it_mixed_methods_research_and_why_whether_its_a_yes_or_no/attachment/5f54865e6a5a0300017ce1f9/AS%3A932660260114433%401599374942659/download/carter2014.pdf)
- Untari, S. (2020). Kolaborasi Tripusat Pendidikan dalam Penataan Budaya Sekolah Berbasis Pembudayaan Nilai Pancasila untuk Membangun Siswa Berkarakter. Magetan: CV. AE Media Grafika.
- Wahyudi, A., Abdillah, R. A., & Nuthqi, A. I. I. (2020). Strategi Dinas Lingkungan Hidup Kota Malang dalam Mengatasi Permasalahan Sampah di Era Revolusi Industri 4.0. Prosiding Simposium Nasional, 1018–1045.
- Whiteman, H. (2023, February 5). The world is creating more single-use plastic waste than ever, report finds. *CNN*. <https://edition.cnn.com/2023/02/05/energy/single-use-plastics-volume-grows-climate-intl-hnk/index.html>
- Yuliananingsih, Y. (2020). Kegiatan Tindak Lanjut Dalam Pengembangan Asesmen Pembelajaran Di Mi. *EL-Muhbib: Jurnal Pemikiran Dan Penelitian Pendidikan Dasar*, 4(1), 17–30. <https://doi.org/10.52266/>