



EMPOWERING WASTE MANAGEMENT THROUGH THE WASTE CORNER MOVEMENT TOWARDS A HEALTHY SCHOOL

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ABSTRACT

Environmental empowerment programs in schools as a source of environmental learning through waste management are one of the efforts that can be given to students to increase environmental awareness. The empowerment program aims to increase the knowledge and awareness of school residents in managing waste properly and correctly. This Empowerment Program was carried out at SMP N 6 Koto This program involves 15 students who become waste corner cadres and 45 students who are given education by waste corner cadres. From this empowerment, a waste corner was formed and 15 waste corner cadres were selected.

Keywords: waste management, waste corner, healthy school

ABSTRAK

Program pemberdayaan lingkungan hidup di sekolah sebagai sumber pembelajaran lingkungan hidup melalui pengelolaan sampah merupakan salah satu upaya yang dapat diberikan kepada siswa untuk meningkatkan kesadaran lingkungan hidup. Program pemberdayaan bertujuan untuk meningkatkan pengetahuan dan kesadaran warga sekolah dalam pengelolaan sampah dengan baik dan benar. Program Pemberdayaan ini dilakukan di SMP N 6 Koto XI Tarusan dengan membentuk *Waste Corner* atau pojok sampah dan membentuk kader pojok sampah melalui pendekatan *Participatory Learning and Action (PAL)*. Program ini melibatkan 15 siswa yang menjadi kader pojok sampah dan 45 siswa yang diberikan edukasi oleh kader pojok sampah. Dari pemberdayaan tersebut, terbentuklah pojok sampah dan terpilih 15 kader pojok sampah.

Kata kunci: pengelolaan sampah, pojok sampah, sekolah sehat

INTRODUCTION

In the 21st century, humanity is gradually realizing the need for responsible environmental management. The future of the next generation depends on how we live on this planet today. It is our responsibility to protect the Earth for the survival of both humans and other living beings. The United Nations (UN) has proposed the Sustainable Development Goals (SDGs) agenda to achieve a civilization that not only focuses on economic growth but also prioritizes environmentally friendly development. However, the realization of this agenda faces numerous challenges, one of which is waste management to reduce environmental pollution.

Waste is often defined as materials or objects that are deemed useless and, as a result, rarely undergo proper management through recycling processes (Mujahiddin et al., 2018). A World Bank report indicates that approximately 2.01 billion metric tons of municipal waste are generated globally each year. Around one-third to 40% of this waste remains unmanaged, leading to even greater environmental issues. In 2016, global waste production contributed about 5% of total global emissions, releasing the equivalent of 1.6 billion metric tons of carbon dioxide, with food waste accounting for 47% of these emissions (Kaza et al., 2018).

According to data from the Ministry of Environment and Forestry in 2021, recorded in the National Waste Management Information System (SIPSN), waste generation in Indonesia from 233 districts/cities reached 29,332,354.04 tons per year. However, the waste management rate was only 49.51%, equivalent to 14,522,639.32 tons per year (KLHK, 2021). The 2021 Indonesian Environmental Statistics report estimated that the city of Padang produced approximately 3,186.7 cubic meters of waste per day, with a waste collection rate of 87.94% (Sub-Directorate of Environmental Statistics,

Efforts to address waste problems are not merely technical issues but also involve management aspects. Therefore, the solution should go beyond just transporting and disposing of waste at final locations; it must include waste reduction at the source, followed by sorting and recycling. The transport-disposal model alone has not proven to be an effective solution to waste problems (Wulandari et al., 2017). Human quality is a key issue and plays a crucial role in environmental preservation efforts. Competence in knowledge, attitudes, and actions related to environmental conservation is essential for all levels of society to contribute to environmental sustainability.

Community empowerment refers to a process that enables people to gain greater control over their lives. It involves individuals and communities acquiring control over the factors and decisions that shape their lives. This process enhances their assets and attributes while building their capacity to access resources, establish partnerships and networks, and amplify their voices to exert influence (Labonte & Laverack, 2020). Empowerment assumes that every individual is an asset in their own right, and the role of external agents is to catalyze, facilitate, or "accompany" communities in gaining power. Therefore, community empowerment goes beyond mere participation or involvement; it implies ownership and collective action explicitly aimed at driving social and political change (Baum, 2018).

Previous studies have demonstrated that community empowerment through the establishment of waste banks in school environments is an effective approach to waste management. Waste bank participants can sort waste by type, collect it, and deposit it at the school's waste bank according to a scheduled weighing, which is typically conducted at least once a week (Ulfah et al., 2016). Another study in Cimanggu Satu reported that a program involving education sessions and workshops on making mini compost and trash bins from recycled bottles, attended by 47 participants, successfully reduced the accumulation of organic and inorganic waste. Moreover, it led to positive behavioral changes, fostering greater environmental awareness and reducing littering (Asnifatima et al., 2018).

In community empowerment, the formation of cadres is one strategy to increase public participation. Previous research has noted that cadres are a key aspect of social capital in fostering community involvement (Syahli & Sekarningrum, 2017). Additionally, the empowerment of Karang Sari Village residents through knowledge enhancement, skill development, attitude shifts, and behavioral changes—using a cadre-based and community leader approach—has been proven effective. This success is reflected in the high attendance of residents and village officials at awareness sessions, socialization events, and the signing of commitment letters by 387 residents and all hamlets that participated in a simultaneous waste segregation movement. The cadre-strengthening method has been shown to effectively mobilize communities in the empowerment process (Widodo, 2021).

Therefore, empowerment at the school level as a source of environmental learning through waste management is one of the efforts that can be introduced to students to enhance environmental awareness. This empowerment is carried out in the form of skill training to reduce, repurpose, and recycle waste into products with added value. Philosophically, waste management is an effort to transform waste from a problem into an economic resource for everyone (Widiyanto & Rahab, 2017). Hence, raising public awareness of waste management is crucial. Encouraging active community participation in environmental cleanliness programs is essential, as a clean environment cannot be achieved without collective involvement in reaching this goal.

Based on initial observations at State Junior High School (SJHS) 8 Padang, waste management has not been implemented effectively. The school community lacks awareness and knowledge regarding proper waste management. Given this background, the author considers it essential to initiate waste management empowerment at SJHS 6 Koto XI Tarusan by establishing a waste corner and training waste management cadres. This initiative serves as a starting point to foster active participation from the entire school community and the surrounding environment in waste

Based on the explanation above, the identified issue is that waste management at SMP N 6 Koto XI Tarusan has not been effectively implemented. The school community still has low awareness and limited knowledge regarding proper waste management. This study focuses solely on efforts to empower the school community through the establishment of a *Waste Corner* at the school. Given this phenomenon, the research question to be addressed is: How can an empowerment program improve the knowledge and awareness of the SMP N 6 Koto XI Tarusan community in managing waste properly and effectively?

METHODS

This empowerment initiative was carried out at SMP N 6 Koto XI Tarusan, involving 15 students as *Waste Corner* cadres. The community empowerment program falls under quasi-experimental research, as the researcher applied an intervention by providing education on waste management to the cadres, along with pre-tests and post-tests as evaluation methods to measure their knowledge improvement. Additionally, as an outcome of the empowerment process, the researcher, acting as a facilitator, along with the trained cadres, established a *Waste Corner* as a designated space for collecting waste. The collected waste was then either processed into handicrafts or sold to recycling collectors.

The implementation flow of the waste management empowerment program at SMP N 6 Koto XI Tarusan is illustrated in Figure 1.

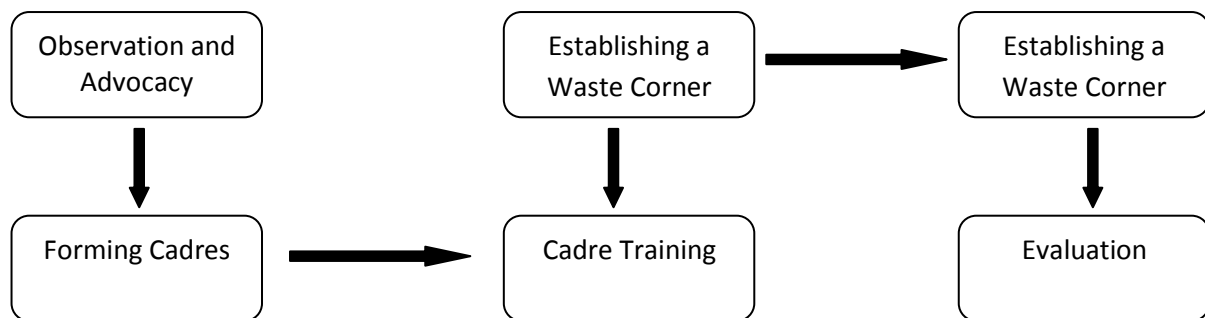


Figure 1. Waste Management Empowerment Flow at SJHS 6 Koto XI Tarusan

The implementation of this community empowerment program adopts the Participatory Learning and Action (PLA) approach. Simply put, a participatory approach ensures that everyone involved in the intervention has a voice, either directly or through representation. This approach allows individuals to have a say in decision-making processes that affect their lives. By fostering a sense of ownership, the participatory approach establishes a strong foundation for the success of community interventions (Carlisle et al., 2018).

RESULTS AND DISCUSSION

After conducting field observations, advocacy efforts, identifying priority issues, and formulating solutions in collaboration with SMP N 6 Koto XI Tarusan, the researcher, as a facilitator of community empowerment through waste management, carried out the following actions:

a. Formation of Waste Corner Cadres

In community empowerment, forming cadres is one of the strategies to enhance public participation. The regeneration strengthening method has proven effective in mobilizing communities in the empowerment process (Widodo, 2021). Based on this, the researcher, as part of the facilitation team, initiated the establishment of Waste Corner cadres at SMP N 6 Koto XI Tarusan.

The facilitation team selected 15 students from SMP N 6 Koto XI Tarusan who were members of the school's Youth Red Cross (YRC) organization to become Waste Corner cadres. These selected students received education from the facilitation team, equipping them with the necessary knowledge to encourage their peers to actively participate in waste management, particularly within the school environment.

Main Duties and Functions of Waste Corner Cadres at SMP N 6 Koto XI Tarusan

1) Main Duties of Waste Corner Cadres

- a. Mobilizing and motivating the school community to actively participate in waste management activities at SMP N 6 Koto XI Tarusan.
- b. Attending a series of cadre training sessions at the Waste Corner.
- c. Educating their peers on proper waste management practices.
- d. Promoting and disseminating information about waste management programs within the school community.
- e. Acting as active guardians of the Waste Corner.
- f. Encouraging and persuading decision-makers at SMP N 6 Koto XI Tarusan to genuinely listen, consider, and facilitate effective waste management efforts at the school.

2) Functions of Waste Corner Cadres

- a. Mobilizer-Motivates, encourages, and mobilizes the participation, self-reliance, and collective effort of the school community in waste management and environmental preservation.
- b. Mentor-Facilitates, educates, provides guidance, and supports peers in waste management practices.
- c. Planner-Plans activities in a participatory manner, including identifying potentials, assets, problems, needs, priorities, and formulating participatory waste management plans.
- d. Mediator-Acts as a bridge between different interests or between needs and resources, providing information to facilitators and stakeholders regarding waste management development at SMP N 6 Koto XI Tarusan.
- e. Advocate-Advocates and persuades stakeholders to listen, consider, and be responsive to the school community's needs related to waste management.
- f. Implementer-Organizes the school community to actively participate in waste management and carries out technical tasks related to the operation of the Waste Corner.

b. Cadre Training on Waste Management



Figure 2. Administering a Pre-Test to the Cadres

Before conducting the training, the facilitator initiated a storytelling session to create a comfortable and relaxed atmosphere. The education and training for Waste Corner cadres were carried out using a lecture method combined with brainstorming through the 3R (Reuse, Reduce, Recycle) song. Additionally, posters were used as visual aids to deliver materials on the definition of waste, its characteristics, waste management, and school waste management planning.



Figure 3. Waste Management Training for Cadres

This activity was divided into three sessions: the pre-test, followed by a presentation by the facilitator, and concluding with a post-test to measure changes in the cadres' level of understanding in the waste corner program. The results of the pre-test and post-test for the waste corner cadres can be seen in the following table.

Table 1. Knowledge Level of Waste Corner Cadres Before and After Training

Knowledge	Mean	Standard Deviation	p
Pre-test	12.67	2.895	0.000
Post-test	18.87	3.292	

Table 1 shows an increase in knowledge among waste cadres before and after the waste management training, rising from 12.67 to 18.87. The paired t-test results indicate a significance value of $p = 0.000$ ($p < 0.05$), leading to the conclusion that there is a significant difference in the level of knowledge before and after the training.

c. Establishing the Waste Corner

The Waste Corner was initiated as a solution to address waste management issues. It adopts a waste management approach that emphasizes the involvement of the school community, particularly the active participation of students at SJHS 6 Koto XI Tarusan, in efforts to reduce, sort, and repurpose waste. Additionally, the Waste Corner serves as an educational and socialization platform where trained waste cadres educate the school community about proper waste management.

The establishment of the Waste Corner involved the collective efforts of all waste cadres. The steps for setting up the Waste Corner are as follows:

- 1) Conducting field observations to identify school assets that could serve as a suitable location for the Waste Corner. Based on observations, a building near the waste disposal site was identified. This building was then repurposed as the Waste Corner at SJHS 6 Koto XI Tarusan.



Figure 4. Waste Corner Location

- 2) Waste Sorting Practice. Previously, the waste corner cadres had learned about the waste sorting process theoretically through training provided by the facilitators. After the establishment of the waste corner, the cadres were then guided to practice sorting waste directly, distinguishing between organic and inorganic waste, as well as categorizing waste based on its condition-whether it could be recycled or not.



Figure 5. Waste Sorting Practice

- 3) Signing of the Commitment Letter.
The empowerment process aims to enable the community to become self-reliant by utilizing their existing strengths. The fifteen selected cadres are members of the Youth Red Cross (YRC) at SMP N 6 Koto XI Tarusan, who will serve as waste corner managers and be responsible for sustaining the empowerment program through the establishment of the waste corner at the school. To solidify this commitment, the facilitators drafted a statement letter, which was then signed by the YRC supervisor at SMP N 6 Koto XI Tarusan.



Figure 6. Signing of the Commitment Letter by the YRC Supervisor of SMP N 6 Koto XI Tarusan

d. Waste Management Education Simulation by Cadres

This step represents the practical implementation of the Participatory Learning and Action (PLA) approach, where cadres learn to educate others about waste management through direct simulation. The simulation is conducted to ensure that training participants (partners) are capable of performing and fulfilling their roles as cadres/counselors effectively. The simulation activities follow these steps:

- 1) Forty-five students from SMP N 6 Koto XI Tarusan were selected and divided into 15 groups, with each group consisting of three students.
- 2) Each group was accompanied by a waste corner cadre who provided education on waste management using lectures and poster media.
- 3) To measure the students' level of understanding, the waste corner cadres administered pre-test and post-test questions.
- 4) After completing the education session, the cadres took each group to the waste corner for hands-on practice in waste sorting.

Facilitator monitoring results showed that the waste corner cadres successfully applied their knowledge of waste management, as demonstrated by their ability to educate their peers. The knowledge level of the 45 students from SMP N 6 Koto XI Tarusan, as a result of the waste management education provided by the cadres, is presented in Table 2.

Table 2. Students' Knowledge of Waste Management Before and After Education

	Pengetahuan	Berarti	Deviasi Standar	P
Pra-tes		13.22	3.218	0,000
Pasca tes		17.91	2.512	

Table 2 shows an increase in knowledge before and after the waste management education, from 13.22 to 17.91. The paired t-test results indicate a significance value of $p = 0.000$ ($p < 0.05$), leading to the conclusion that there is a significant difference in students' knowledge levels before and after the waste management education.



Figure 7. Simulation of Waste Management Education by Cadres for Students

CONCLUSION

Based on the results of the waste management empowerment program conducted at SMP N 6 Koto XI Tarusan, the following conclusions can be drawn: 1) Waste management at SMP N 6 Koto XI Tarusan has successfully improved the knowledge and skills of the school community, particularly the Waste Corner cadres, through the empowerment of young cadres in waste management. 2) The establishment of the Waste Corner and the formation of Waste Corner cadres have ensured the continuity of the program as a dedicated platform for waste management at SMP N 6 Koto XI Tarusan. 3) The cadre reinforcement method has proven effective in mobilizing the school community in the waste management process.

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