Increasing Community Awareness of Household Waste Management Through Environmental Education

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ABSTRAK

Kata Kunci:
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Pengelolaan Sampah
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Perilaku Pro-Lingkungan

Pengelolaan sampah rumah tangga di Kelurahan Patrang, Kabupaten Jember, masih menghadapi tantangan rendahnya kesadaran masyarakat dalam memilah sampah dari sumbernya. Kegiatan pengabdian masyarakat ini bertujuan meningkatkan pengetahuan dan sikap warga melalui pendekatan edukatif berbasis *Theory of Planned Behavior*. Metode meliputi survei pretest, penyuluhan, demonstrasi praktik, dan posttest dengan 20 responden. Hasil pretest menunjukkan 90% responden belum melakukan pemilahan sampah, meskipun sebagian besar menyadari dampak negatif pembuangan sampah sembarangan. Setelah edukasi, terjadi peningkatan signifikan dalam pemahaman dan sikap pro-lingkungan, terutama kesiapan memilah sampah di rumah. Temuan ini menunjukkan bahwa pendekatan edukatif dan partisipatif efektif dalam mendorong perubahan perilaku pengelolaan sampah. Disarankan agar program serupa dilakukan secara berkelanjutan dan melibatkan lebih banyak warga guna mendukung terciptanya lingkungan yang bersih dan sehat.

ABSTRACT

Keywords:
Environmental Education
Theory of Planned Behavior
Waste Management
Community Awareness
Pro-Environmental Behavior

Household waste management in Patrang Village, Jember Regency, still faces the challenge of low community awareness in sorting waste at the source. This community service activity aims to enhance residents' knowledge and attitudes through an educational approach based on the Theory of Planned Behavior. The methods include pretest surveys, counseling, practical demonstrations, and posttests with 20 respondents. The pretest results showed that 90% of respondents had not yet sorted waste, although most were aware of the negative impact of improper waste disposal. After the education, there was a significant increase in understanding and pro-environmental attitudes, especially the readiness to sort waste at home. These findings indicate that educational and participatory approaches are effective in encouraging changes in waste management behavior. It is recommended that similar programs be conducted sustainably and involve more residents to support the creation of a clean and healthy environment.

I. INTRODUCTION

The increase in the amount of household waste in Indonesia has become an increasingly complex environmental issue in line with population growth and the rising consumption patterns of society. Based on data from the Ministry of Environment and Forestry (2023), Indonesia produces more than 175,000 tonnes of waste per day. Unfortunately, the waste management carried out by the community is still not optimal, especially in the aspect of waste sorting at the source.

Jember Regency is one of the areas with a high potential for household waste generation. The population of Jember Regency, estimated at 2,600,663 in 2023 (BPS Jember Regency, 2023), generates 1,033.69 tonnes of waste daily and 377,298.02 tonnes annually (KLHK, 2023). The large volume of waste has serious implications for environmental pollution and public health if not managed properly.

Waste management in Jember Regency continues to encounter several challenges, one of which is the low level of public awareness regarding the importance of sorting waste at the household level. Organic and inorganic waste is generally still mixed, and community participation in waste management programs, such as waste banks, is still very low. The evidence indicates that the problem is not only technical but also related to

psychosocial aspects that influence individual behaviour in waste management.

Various previous community service programmes generally emphasised technical aspects such as training in waste bank management, composting, or utilising waste to create recycled products. However, these approaches often do not address the root of the problem, which is the low awareness and lack of comprehensive behavioural change in the community. This gap is the main focus of this community service activity, by presenting an educational approach based on behavioural theory that has not yet been systematically applied in similar programmes.

Referring to the Theory of Planned Behaviour by Ajzen (1991), individuals' intentions and behaviours in waste management are influenced by three main factors: attitude towards the behaviour, subjective norms, and perceived behavioural control (Reijonen et al., 2021). Qurniawati and Nurohman (2020) Theory of Planned Behaviour (TPB) is a structured approach widely applied in various disciplines to examine the factors influencing individual behaviour and decision-making. Therefore, this community service program offers a new contribution through education that not only enhances knowledge but also shapes attitudes and social norms that support the habit of independently and sustainably sorting waste.

The goal of this community service activity is to raise awareness and shape pro-environmental behaviour in the community regarding household waste management, particularly through the habitual sorting of waste from its source. Effective waste management can reduce the accumulation of waste, thereby creating a clean and healthy environment (Svari and Sutama, 2022). It is hoped that this intervention can be the first step in building a sustainable waste management system and contribute to environmental preservation efforts at the community level.

II.   PROBLEM

The issue of household waste management remains unoptimized in Patrang Village, Jember Regency. Many residents have not yet separated organic and inorganic waste, and they lack understanding of the importance of sustainable waste management, as shown in the picture below.

Picture 1. Condition of Unsorted Waste in the Semangka Alley Area

Image 1 shows the condition of the waste disposed of by residents in Semangka alley, Patrang village, which is not sorted between organic and inorganic waste. This condition can trigger difficulties in decomposing waste at the final disposal site. This issue emphasizes the need to raise public awareness through practical and participatory environmental education activities. With the right approach, it is hoped that the community can become more caring and actively involved in household waste management to create a clean and healthy environment in the Patrang area.

III. METHOD

This community service activity (PKM) was conducted with a participatory and educational approach aimed at raising public awareness about household waste management, particularly in RT 02, RW 03, Gang Semangka, Patrang Village, and Jember Regency. On Saturday, May 10, 2025, we carried out this activity with 20 respondents, including housewives and local PKK members. The method of implementing the activity includes the following stages:

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1. Survey (Pre-Test)

    Before the outreach activities were conducted, the PKM team distributed questionnaires to all participants to measure their level of knowledge, attitudes, and behaviours related to household waste management. The questionnaire includes questions regarding:

    a) Habits of disposing and sorting waste.
    b) Understanding the concept of 3R (Reduce, Reuse, Recycle)
    c) Knowledge about the negative impacts of improper waste management The instruments used were closed and open-ended questionnaires, supplemented with a brief observation sheet.

2. Socialisation and counselling.

    a) The activity continued with direct counselling that included the following material: The basic concept of 3R—the 3R approach (reduce, reuse, and recycle)—is often used as a strategy to reduce the volume of plastic waste (Wibowo et al., 2024).
    b) Techniques for sorting organic and inorganic waste
    c) The environmental impact caused by poor waste management We used PowerPoint media, educational videos, and interactive discussions to present the material and encourage participant engagement.

3. Practical Demonstration

    The PKM team conducted simulations and live demonstrations that included the following activities:

    a) The practice of sorting waste based on its type.
    b) Simple composting techniques using local tools and materials, such as used buckets, dry leaves, and food scraps.

    Participants are invited to actively engage in this practice to develop skills and ecological awareness that can be applied at home.

4. Evaluation (Post-Test and Reflective Discussion)

    We conduct the evaluation using a post-test instrument identical to the initial survey to measure the increase in understanding and changes in participants' attitudes. This agrees with what Tarigan et al. (2025) say, which is that the last step is to have participants complete a post-test questionnaire that is similar to the pre-test to assess any changes in their understanding and attitudes, and to help analyse the results. The next step involves conducting small group discussions as a qualitative evaluation to understand participants' opinions regarding the benefits of the activities and their application in their respective environments.

    We descriptively and comparatively analysed the evaluation data to determine the effectiveness of the PKM activities in increasing awareness and waste management practices.

IV. RESULTS AND DISCUSSION

This community service activity was carried out in Patrang Village, Jember Regency, with the main focus on raising residents' awareness in managing household waste through an environmental education approach. The issue of waste management in this area is related to technical aspects and closely tied to psychosocial factors, such as habits, attitudes, and social norms that do not yet support pro- environmental behaviour (Ernawati & Adinata, 2025).

As an initial step, the implementation team conducted a pretest to explore the extent of the community's knowledge and attitudes towards waste management, particularly in terms of habits related to disposing of and sorting waste at home. The pretest results indicated a gap between knowledge and actual practices in waste management. Although most residents have become aware of the negative impact of littering, the practice of waste segregation is still very low.

These findings serve as an important foundation for developing more practical educational activities. Through socialising sessions, counselling, and hands-on practice, the community is introduced to simple yet effective ways to sort and manage household waste. This activity is designed to be easily understood, and it can be directly practiced in the surrounding environment.

After the education was conducted, the community were given a post-test to measure changes in their understanding. The results showed a significant improvement, both in knowledge and attitude. The community has started to show enthusiasm for sorting trash, and many have expressed their readiness to implement these new habits at home.

The next discussion will elaborate in more detail on the pretest and posttest results while also evaluating the extent to which this educational activity is able to foster a new awareness in managing waste more responsibly.

1. Pretest Results

Before the educational activities were conducted, a pretest was carried out to measure the level of knowledge and awareness of the community in Patrang Village regarding household waste management. The following table presents the results of the pretest:

Table 1. Pretest Results

No	Description	Disagree strongly	Disagree	Neutral	Agree	Strongly agree
1	Can littering cause floods?	10	8	0	1	1
2	Does littering contribute to environmental pollution?	0	2	2	9	7
3	My house clearly separates its trash bins for organic and inorganic waste.	0	0	2	10	8
4	I feel that household waste separation is essential to reduce environmental pollution.	0	8	4	4	4

Based on Table 1 above, the pretest results in the activity yield:

a) As many as 90% of respondents still dispose of household waste in inappropriate locations, and only two respondents show conscious concern for proper disposal.
b) The majority of respondents (16 people) agreed or strongly agreed that littering has a negative impact on the environment. This indicates that the community has basic knowledge, but it has not yet been fully applied in real actions.
c) On the question regarding waste separation at home, only 8 respondents agreed or strongly agreed, indicating that the practice of separation is still not commonly done.
d) Most respondents agreed that waste sorting is important, but there are still doubts and a lack of knowledge in its implementation.

Most residents actually understand that littering can have a negative impact on the environment. However, this understanding has not yet fully reflected in daily actions, especially in terms of waste sorting. These findings are in line with the research results of Wahyuni & Fitriani (2020), which state that although the level of public knowledge about the environment is quite high, practices for managing household waste are still relatively low due to a lack of habits and motivation. We have included pictures of the community service activities we carried out.
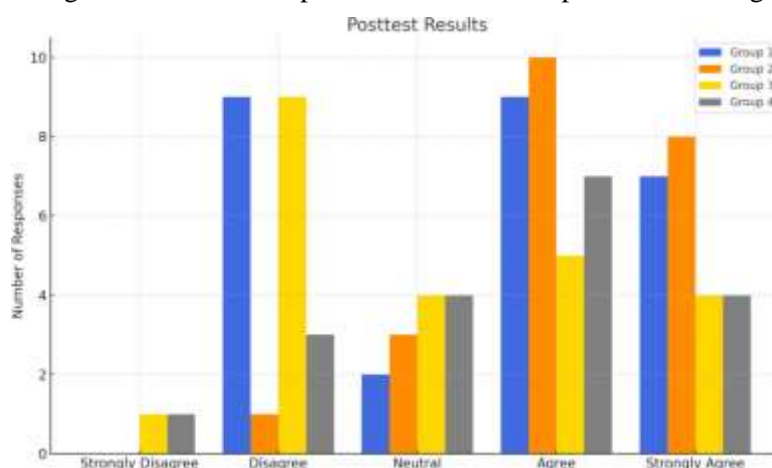

Picture 2. Illustrates the materials presented by the PKM team.

Picture 3. A photo with the Residents of Semangka Alley

2. Posttest Results

The post-test results show a significant increase in residents' awareness and commitment to the importance of responsible waste management. Here is the posttest result table depicted in the diagram below.

Picture 4. Post-test Result Diagram

Based on Figure 4. The post-test result diagram above, in the first question, the majority of respondents showed an understanding that littering is not an action that can be justified. This is evident from the dominance of answers in the agree and strongly agree categories, unlike the results during the pretest, where there were still quite a few respondents who answered disagree or even neutral. This means that there has been a shift in attitude towards more environmentally friendly behaviour

Similarly, in the question assessing residents' willingness to start sorting waste at home, there was a significant increase in the responses of 'agree' and 'strongly agree'. These findings reinforce Harijanto's (2019) statement that community-based education can foster a positive attitude towards new habits, especially those related to the environment and cleanliness.

Overall, the post-test results indicate that environmental education designed with a participatory and practical approach can drive real changes in the mindset and behaviour of the community regarding household waste management.

3. Comparison with Previous Service

Based on previous community service reviews, the approaches commonly used are more technical and one-way, such as recycling training or the establishment of waste banks, without addressing aspects of

behavioural change and social norms. This results in low levels of programme sustainability.

This service presents an approach based on the psychosocial theory (Theory of Planned Behaviour), which has not been widely applied in similar services. This intervention provides information and encourages the formation of positive attitudes, norms, and intentions towards waste management. Safitri (2024) states that the Theory of Planned Behaviour (TPB) concept posits that behaviour is the result of prominent beliefs about that behaviour, where although individuals may have many beliefs, only a small portion emerge when facing certain situations. The Theory of Planned Behaviour (TPB), developed from the Theory of Reasoned Action (TRA), explains that behaviour is performed due to the presence of intention (behavioural intention), which can be influenced and predicted not only by TPB but also by the individual's internal and external motivations (Dewi et al. 2018). Thus, this activity provides a new contribution to community service by integrating aspects of relevant and sustainable behavioural education in household waste management.

4. Analysis and Impact

Pretest data and observation results during the activities indicate that the initial level of knowledge is excellent but still low in implementation. The education provided effectively enhanced participants' understanding and motivated them to change their behaviors. This serves as an important foundation for continuing similar activities sustainably.

V. CONCLUSION

The results of the community service activities in RT 02 RW 03 Gang Semangka, Patrang Village, Jember Regency, show an increase in residents' knowledge and attitudes towards household waste management after being given a participatory-based educational intervention. Based on pretest data, 90% of respondents still dispose of waste in inappropriate places, and only 10% demonstrate proper waste disposal behaviour. Additionally, only 40% of respondents stated that the trash bins in their homes are clearly separated between organic and inorganic waste.

After the implementation of education and direct practice, the posttest results showed a significant improvement. Most respondents (more than 80%) agreed and strongly agreed on the importance of sorting waste and showed readiness to start practising waste sorting at home. This change indicates that the environmental education approach based on the Theory of Planned Behaviour is effective in influencing attitudes and shaping pro-environmental behavioural intentions.

However, the changes that have occurred are still short-term and cannot yet be considered strong indicators of sustainable behavioural change. Therefore, follow-up actions in the form of regular monitoring and strengthening community support are necessary so that household waste management practices can continue to develop consistently and be integrated into the daily lives of the Patrang community.

THANK YOU, NOTE

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