

WASTE MANAGEMENT SIMULATION: INCREASING COMMUNITY AWARENESS OF RW 06 TUNJUNGSEKAR THROUGH ROLE PLAY

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Abstract - Waste management is a crucial issue in many areas, including in RW 06 Kelurahan Tunjungsekar, Malang City, which is facing increasing waste volume due to urbanization. Although inadequate waste management can have serious environmental and health impacts, public awareness of the importance of waste segregation and treatment is still low. This article discusses implementing a roleplaying game-based waste management socialization program designed to trigger changes in waste care behavior in the area. The role-play method was chosen due to its interactive nature, where residents are directly involved in simulating waste management through real-life scenarios. The results showed a significant increase in residents' awareness and participation in the importance of waste management, as well as a strengthened sense of collective responsibility in keeping the environment clean. The findings confirm that innovative approaches such as role-playing can be an effective alternative in environmental campaigns, especially in raising awareness and changing people's behavior regarding waste management.

Keywords: Simulation, Role Play, Waste Management

1. INTRODUCTION

Waste management is a critical issue faced by many communities around the world, including in Indonesia. Along with rapid population growth and urbanization, the volume of waste generated continues to increase, while existing management systems are often inadequate to effectively handle the amount. In RW 06 Kelurahan Tunjungsekar, which is located in an urbanized area with fast-growing social and economic dynamics, this challenge has become even more apparent and complex. In the face of these conditions, it is imperative to implement more strategic and effective efforts to raise community awareness of the urgency of waste segregation and treatment and to ensure that the management measures taken can better meet local needs and challenges.

Inadequate waste management not only has a serious impact on environmental cleanliness but also has significant implications for public health and overall quality of life (Kurniawati et al., 2024). According to data from the Malang City Environmental Agency, the amount of waste generated every day reaches 600 tons, and only 50% of the waste is managed properly (DLH Malang City, 2023). Waste that is left untreated can trigger pollution that damages the quality of soil, water, and air and creates conditions that allow the spread of various infectious diseases. In this context, it is crucial to educate the public on effective and correct waste management methods, as well as motivate them to be actively involved in the process to ensure that the approach adopted can address this issue comprehensively and sustainably.

Effective socialization on waste management can lead to significant changes in people's behavior. However, traditional methods of delivering environmental messages often fall short of capturing attention or motivating sustainable action. In this context, more innovative and creative approaches are needed to create a more substantial and sustainable impact. One promising method to achieve this goal is the use of role-playing games, which can provide an interactive and immersive experience that can facilitate better understanding and engagement in waste management issues. Salsabilla (2020) showed that role-playing simulations can help improve the character of environmental awareness, including waste management. Role-playing games allow participants to interact with simulated situations so they can experience the impact of their actions.

Role-playing is an interactive learning technique that effectively allows participants to engage directly in simulated situations that reflect real reality. In the context of waste management, role-playing offers a contextualized and immersive practical experience, which not only helps participants understand the impact of various decisions related to waste management but also highlights the complexity and nuances of such decisions. By acting out various scenarios and facing waste management challenges head-on, participants gained a more comprehensive understanding of the importance of waste segregation and optimal treatment techniques, as well as how their decisions can affect the outcome in the context of overall environmental management.

This article will explore the implementation of a socialization program designed to trigger changes in waste management behavior in RW 06 Kelurahan Tunjungsekar through the application of role-playing methods. The program aims to utilize an innovative interactive approach to raise awareness and encourage behavioral change in the community regarding waste management more holistically. By conducting simulations that illustrate various waste management problems, the program is expected to deepen participants' understanding of the complexity of waste issues and provide practical insights into more effective management strategies. Through active engagement in specially designed scenarios, participants are expected to internalize key concepts and apply practical solutions in the context of their daily lives.

2. METHOD

The community service carried out at the Balai RT 05 and 06, located on Jalan Ikan Gurami, Tunjungsekar Village, Lowokwaru District, Malang City, East Java 65143, on July 31, 2024, consisted of socialization activities aimed at triggering waste care behavior through the use of role-playing methods in waste management. This socialization program applies techniques that include role-playing, material presentation, and question and answer sessions with Ms. Yunita and Ms. Eka as resource persons. During the implementation, researchers organized several stages to ensure the smooth running of the activities, including the preparation, implementation, and evaluation stages. The details of each stage are as follows:

1) Preparatory

This community service activity requires careful preparation and is not as simple as it seems. Some things that need to be prepared include:

- a. Coordinating and communicating with Tunjungsekar Village to plan the implementation of community service activities, namely socialization aimed at triggering waste care behavior, to understand the potential of the area that will be the target of these activities.
- b. Coordinate and communicate with the head of RW 06, which is the target area of the activity based on direction from the village.
- c. Contact the waste bank manager in Tunjungsekar Village to be a resource person in the activity.
- d. Collecting data from relevant and accurate sources to determine the material to be delivered in the socialization.
- e. Develop a plan and prepare equipment needed for the implementation of socialization activities.
- f. Conveying information about the activities and schedule for the implementation of socialization to residents who are the target of the activity.
- g. The equipment needed and the plan designed during the implementation of socialization activities.

2) Implementation

The implementation stage includes providing material on waste sorting and management, with students and residents of RW 06 Tunjungsekar as participants.

The resource person acts as a role-play guide and also as an evaluator at the end of the activity. This stage can be described as follows:

- a. Students explained the rules of the game and determined the role of each resident randomly.
- b. The game consists of 5 rounds and a break for each round.
- c. Each role will be informed of their respective characters and duties.
- d. Distribution of toy money to the cast with a nominal value of Rp. 200,000 for each household rolee.
- e. The roles consist of households (A, B, C, D, E), landfill officers, TPS officers, health workers, youth organizations, RT heads, mayors, chicken farmers, and waste bank officers.
- f. The role-play scenarios created reflect the daily reality and problems found in waste management.
- g. During the simulation, residents were faced with a situation that required them to work together in managing waste.
- h. After the simulation was completed, a discussion session was held to reflect on the experience that had been passed. Residents were invited to share their views on the importance of waste management and what they can do to contribute to keeping the surrounding environment clean.

3) Evaluation

The evaluation stage was carried out through reaffirmation and presentation of good and correct waste management material by resource persons.

3. RESULTS AND DISCUSSION

Sejati (2009:12) explains that waste is discarded or wasted material derived from human or natural activities that no longer has a main function or important element. As long as humans are active, waste generation will always exist, both in large and small quantities. However, according to Anwar, human activities, including industrial activities, are not biological activities because human waste is not categorized as waste. From an environmental perspective, waste can cause pollution or disrupt environmental balance. According to the dictionary of environmental terms, waste is defined as material that has no value, is not useful for public purposes, and consists of damaged materials, defective products from manufacturing processes, excess material, or rejected materials.

Waste management is an important part of maintaining cleanliness. Cleanliness itself does not only mean being free from waste but also includes aesthetic aspects (Suryani, 2014). In waste management, three main things need to be considered carefully: identification of the condition of the waste management system that is already running; a proper understanding of how to manage waste well; and policies for fostering and developing the management system. Waste management includes all activities undertaken to handle waste from the time it is generated to its final disposal. In general, these activities include controlling the

amount of waste generated, collection, transportation, processing, and the final disposal process.

Waste management is very complex because it includes technical, economic, and sociopolitical aspects. Waste management is an effort to organize or manage waste from the process of containerization, collection, transfer, transportation, and processing to final disposal (SNI, 2002). The waste management system is a waste management process that includes five aspects. The five aspects are closely related to one another to form a single unit, so efforts to improve waste management must include various systems. These aspects are institutional aspects, financing, regulation, community participation, and operational techniques (Suryani, 2014).

Good waste management is very important, as it is directly related to its impact on the environment. If waste is not managed properly, it can cause serious environmental pollution. For example, unmanaged plastic waste can pollute the ocean and threaten marine life. In addition, heavy metal waste such as lead and mercury can damage the quality of soil and water, which in turn adversely affects human and animal health. Therefore, a deep understanding of waste management is necessary to maintain a clean environment and public health.

Effective waste management is one of the main keys to creating a clean and healthy environment. In RW 06 Kelurahan Tunjungsekar, efforts to increase public awareness of the importance of waste management continue. One innovative and interactive method is through a role-play-based waste management simulation. This activity aims to provide direct experience to residents about the importance of sorting, recycling, and reducing waste generated.

Roleplaying was chosen as an educational method because of its ability to actively engage participants. Through these games, citizens can interact directly with real-life scenarios, where they play the role of janitors, waste managers, or citizens responsible for waste in their households. In addition to being fun, this method is also effective in evoking empathy and providing a deeper understanding of the challenges faced in waste management.

The results of this simulation were very positive. Residents of RW 06 Tunjungsekar became more aware of the impact of improper waste management on the environment. They also learned about practical ways to reduce waste, such as recycling reusable items and utilizing organic waste for compost. In addition, the simulation also built a sense of community and collective responsibility among the residents. They better understand that waste management is not just the job of the government or janitors but a shared responsibility.



Figure 1. Evaluation activities as well as presentation of material by resource persons



Figure 2. Role-play activity



Figure 3. Photo with the head of RW 06 Tunjungsekar

4. CONCLUSION

The role-play-based waste management simulation in RW 06 Kelurahan Tunjungsekar proved to be an innovative and effective method in raising community awareness about the importance of proper waste management. Through hands-on experience in role-playing, residents gained a deeper understanding of the importance of sorting waste, recycling, and reducing waste generation. More than just technical knowledge, this activity also succeeded in building a sense of collective responsibility among residents. They realized that waste management is not just the job of the government or the janitors but a shared obligation. This awareness encourages residents to work together to maintain the cleanliness of their environment, strengthens social relations in the community, and creates a stronger and more sustainable culture of waste care.

The success of this simulation shows that a role-play-based approach can be an effective and innovative alternative in waste management socialization

programs. By utilizing this method, similar programs in the future can be more successful in raising awareness and motivating changes in community behavior, especially in the context of environmental management. This emphasizes the importance of applying an interactive and participatory approach in dealing with environmental issues so that the results achieved can be more comprehensive and have a long-term impact. Through active community involvement, it is hoped that better waste management measures can continue to be implemented to create a clean, healthy, and sustainable environment.

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