

From Waste to Performance: The Transformation of Inorganic Waste into Creative Wayang Puppets as a Medium for Children's Environmental and Cultural Education

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Abstract: *Inorganic waste remains a persistent environmental problem that requires sustainable management, while local arts such as wayang offer potential as a medium connecting environmental issues with cultural values. This study describes the implementation of the "Practical Workshop on Making Wayang from Waste as an Alternative for Processing Inorganic Waste" activity, conducted by the KKN 170 UNS team in Kampung Sipek, Plaosan Subdistrict, Magetan Regency, involving children and residents in transforming inorganic waste into wayang figures. This research employed a qualitative descriptive approach using a case study method. Data were collected through participatory observation, interviews with children, and documentation of the wayang-making process, then analyzed interactively through data reduction, data display, and drawing conclusions. The results show that inorganic waste materials can be transformed into aesthetically valuable wayang artworks, culminating in the "Wayang-wayang Wirang" performance held on Indonesian Independence Day. The activity fostered children's creativity, strengthened the community's environmental awareness, and demonstrated that waste management can be*

integrated with cultural education. These findings suggest that art-based waste management can serve as an alternative model for environmental education and community empowerment.

Introduction

The issue of inorganic waste remains an environmental problem that requires sustainable management. Plastic waste and other inorganic materials that are not properly managed can accumulate and cause various impacts on the environment. One alternative management approach that can be implemented is the reuse of waste to create creative products through the principles of reuse and recycling. This approach is not only focused on reducing waste volume but can also serve as a means of fostering creativity and environmental education. The reuse of waste through educational activities can enhance children's creativity while fostering awareness of the importance of environmental conservation (Wati & Septiani, 2023). This is supported by Farid & Aurelia (2022), who found that plastic waste recycling activities can serve as a means to develop students' creativity while enhancing their understanding of the importance of waste management. Furthermore, both organic and inorganic waste can be utilized in various creative activities, thereby encouraging the community to process and reuse materials that were previously considered worthless (Adzim et al., 2023).

Waste management can also be integrated with the promotion of local arts and culture. Wayang, as a form of traditional Javanese art, has the potential to serve as an educational medium that connects environmental issues with cultural values. Research on the Wayang Sampah community shows that wayang and gamelan performances can be integrated with environmental advocacy (Jasmine & Trinugraha, 2024). The results of this research indicate that a culture-based approach can raise public awareness of environmental issues and encourage more sustainable waste management practices. These findings demonstrate that wayang can be positioned not only as an art form but also as a medium for communication and environmental education that is closely aligned with the social and cultural context of the community.

The use of wayang as a medium for environmental education can be developed through activities that directly involve children. Children can be introduced to wayang while simultaneously learning to manage waste through activities that involve creating artworks from discarded materials. Such activities provide a unique experience because children not only receive explanations but are also actively involved in selecting materials, shaping forms, and producing artworks according to their own creativity. This process can make learning about waste more engaging while also giving children the opportunity to explore the art and culture around them. Art-making activities using inorganic waste can enhance elementary school students' creativity, particularly in generating ideas, elaborating on them, and producing original works (Atpis et al., 2024). By combining creative activities, waste management, and an introduction to wayang, environmental education focuses not only on how to reduce waste but also on how waste can be repurposed into something of value.

Although research on the use of waste as a medium for creativity and environmental education has grown, previous studies have largely focused on craft-making or the general application of

3R education, while the integration of inorganic waste processing with the creation of wayang-style artworks as a medium for introducing art and culture to children has not been extensively explored. Thus, there is an opportunity to develop activities that not only teach children about waste management but also provide them with hands-on experience in creating cultural works. Based on this opportunity, the activity “Practical Workshop on Making Wayang Puppets from Waste as an Alternative Method for Processing Inorganic Waste” was conducted by involving children in the process of transforming waste into wayang figures according to their own creativity. The novelty of this activity lies in the integration of environmental education, inorganic waste processing, creativity development, and an introduction to the art and culture of wayang into a single participatory activity. Therefore, this study aims to describe the implementation of the practice of making wayang puppets from inorganic waste as an alternative method of waste processing as well as a medium for educating children about art, culture, creativity, and the environment.

Research Methods

This study employs a qualitative descriptive approach using the case study method to examine the process of transforming plastic waste into wayang puppets as a medium for environmental education for children and residents in Kampoeng Sipek, Plaosan Subdistrict, Magetan Regency. Data collection was conducted through participatory observation during the activities, interviews with children, and documentation in the form of photos and videos of the puppet-making process. Data analysis was conducted interactively, including data reduction, data presentation, and drawing conclusions to describe the process and the impact of the activities on increasing environmental awareness regarding waste and fostering creativity among children and community members.

Result and Discussion

This activity was carried out in Kampung Sipek, Plaosan Village, Plaosan Subdistrict, Magetan Regency, East Java, in August. Data collection was conducted through observations of waste management conditions in the community, documentation of the process of making wayang puppets from inorganic waste, and observations of community involvement in the processing and performance. The data obtained was then analyzed descriptively to identify the forms of waste utilization, the creative processes involved, and the educational and empowerment potential arising from these activities.

Group photo with the children



Group photo with the head of Plaosan Village



Presentation of the waste puppets to the village head and the RT chairman



Work program to make wayang puppets from inorganic waste

Puppets made from inorganic waste (wayang rosok)

The process of making puppets from inorganic waste

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Wayang performance on Indonesia's Independence Day



Transforming Waste into Art: Inorganic Waste Puppets

The results of the activity demonstrate that waste materials found in the community have the potential to be developed into works of art with aesthetic value. The utilization of waste in this activity is not merely focused on collection and resale but is transformed through a creative process into wayang puppets. Materials previously viewed as waste are repurposed as integral components in shaping the characters and forms of the wayang figures. The process of creating Wayang puppets from inorganic waste involves adapting the characteristics of the available materials to the characters to be created. This aligns with the local initiative in the Kampung Sipek area, where every week, residents around the “ ” collect scrap items for resale. Our KKN 170 UNS team leveraged this activity to support the success of our program, which aligns with the community's ongoing efforts.

This activity began by educating the children that the trash they discard can be transformed into wayang art. Inspiration for the characters came from figures found in the surrounding environment, which were then matched with the types and shapes of inorganic waste that could be utilized. Thus, the selection of materials considered not only their availability but also how they could support the representation of the characters. This process demonstrates that waste processing requires creativity in identifying new functions for objects previously deemed useless.

These results indicate a shift in the value and function of materials—from waste to a medium for artistic expression. These wayang puppets made from inorganic waste not only

possess aesthetic value but also convey the message that waste found in the surrounding environment still holds potential for utilization through creativity. These findings reinforce the idea that waste management can be developed through creative approaches that are not limited to functional reuse but can also be directed toward the creation of works of art.

Wayang Made from Inorganic Waste (Rosok) as a Medium for Education and Community Empowerment

The development of wayang puppets made from inorganic waste was then continued through a performance timed to coincide with Indonesia's Independence Day; the performance, titled "Wayang-wayang Sidang," served as a means of conveying a message to the community. The "Wayang-wayang Wirang" performance embodies religious values related to the importance of gratitude and surrender to God Almighty. Through a simple storyline and humor that reflect the characteristics of local life, the performance offers a reflection on humanity's tendency to prioritize the fulfillment of desires over recognizing the many blessings they have already received. This message is conveyed through the use of language and depictions of situations closely tied to everyday life, allowing the values embedded in the performance to be understood in a more contextual way by the community. Thus, the "Wayang-wayang Wirang" performance serves not only as a form of entertainment but also as a medium for conveying religious values and social reflections to the community.

Furthermore, the performance is not merely intended as an artistic show but serves as an educational medium to directly demonstrate that waste generated by the community can be transformed into works of artistic value. The performance opened with a story told through the inorganic wayang puppets, performed by a puppeteer—one of the members of the UNS KKN 170 group—followed by a theatrical performance featuring several members of the UNS KKN 170 group and residents of Kampoeng Sipek. Through visual elements and performances, the message about waste utilization can be conveyed in a more concrete way that is easily understood by the community.

The results of the activity also showed that the community actually has the potential to process materials found in their immediate surroundings. This potential does not always require complex technology or facilities, but rather creativity, opportunities to experiment, and guidance. In the process of developing Wayang from inorganic waste, guidance was framed as a collaborative learning process, so that the community did not merely receive instructions but actively participated in discovering ways to utilize the materials available in their environment. This finding implies that art-based waste management can serve as a form of community empowerment. Waste is no longer merely viewed as something that must be reduced, sold, or discarded, but can be seen as a source of materials that can be developed into works of visual art or performing arts. Thus, Wayang made from inorganic waste serves as an example of how the issue of waste can be integrated with the community's creative potential, thereby generating educational, aesthetic, and social value simultaneously.

Conclusion and Recommendation

The “Making Waste Puppets” workshop—an alternative method for processing inorganic waste—held in Kampung Sipek, Plaosan Subdistrict, Magetan Regency, successfully demonstrated that inorganic waste can be transformed into aesthetically valuable wayang puppets while also serving as a medium for environmental and cultural education for children. Through direct involvement in the process—from selecting materials and shaping the characters to staging the “Wayang-wayang Wirang” performance during Indonesia’s Independence Day celebration—this activity fostered children’s creativity, strengthened community awareness of waste management, and provided a hands-on experience in creating cultural works. Thus, the research objective—to describe the practice of creating wayang puppets from inorganic waste as an alternative to waste management while serving as a medium for educating children on art, culture, creativity, and the environment—has been achieved. This study has limitations because it focused on a single activity location over a relatively short period, so the results cannot yet be broadly generalized to other community contexts. Therefore, it is recommended that similar activities be replicated in other regions with different sociocultural characteristics, and further research is needed to examine the long-term impact of these activities on changes in waste management behavior and the preservation of wayang culture among children and the community. In addition, schools, village governments, and local arts communities are encouraged to support the sustainability of such arts- and environment-based activities so that their benefits can be felt more widely and sustainably.

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