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Using Augmented Reality To Make People Aware Of The Importance Of Managing Waste Through The Tiktok Social Media Application

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ABSTRACT

Waste management has become hot news in Indonesia and is increasingly urgent to be resolved. In an effort to make Indonesian people aware of the importance of their role in managing waste, especially the younger generation, information and communication technology can be an effective tool. One platform that is popular among teenagers is the social media TikTok, a social media application based on videos, images and audio. Exploring the use of Augmented Reality (AR) technology in the context of the TikTok application to increase public awareness about the importance of managing waste through the use of creative and interactive AR filters, this has had a positive impact in increasing Indonesian society's understanding and awareness of the waste problem and the steps that should be taken. taken to resolve it. This shows that the use of AR in the TikTok application can be a very effective tool for spreading environmental messages and encouraging positive behavior regarding waste management among all generations. Practical and theoretical implications in this regard are discussed as well as recommendations for further development in utilizing AR technology or Augmented Reality in the context of social media for the purpose of protecting the environment from waste.

Keyword : Tiktok, Augmented Reality, Waste Management

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1. INTRODUCTION

Waste management is now one of the biggest problems currently being faced by Indonesian society. The negative impacts of the waste problem, including environmental pollution, ecosystem damage and human health, are increasingly felt and require fast and effective solutions. In the midst of population growth and human consumption which continues to increase every day, it is very important for society to understand and take effective steps in waste management.

In an effort to make the public aware of the importance of their role in protecting the environment and managing waste wisely, various approaches and strategies have been developed by the current Indonesian government. One interesting approach is to utilize information and communication technology, especially social media, one of which is TikTok, as a tool to spread messages about protecting the environment and educating the public about the importance of managing waste.

Among the many social media platforms that are currently popular, TikTok has become one of the biggest applications in Indonesia now, especially among the younger generation. With a relatively large number of users and very fast growth, TikTok also offers great potential as an application for conveying educational messages to millions of users throughout the world, especially in Indonesia, about the importance of managing waste, an example of which we have often seen recently. This is a content creator named Pandawara, this content creator has become a person who really educates the Indonesian people about how dangerous waste is if it is not managed properly and correctly, and now Pandawara has made people aware with the content he has created, you need to remember Currently, Indonesia has become the fifth country that contributes the most waste to the oceans and land, especially plastic waste. However, in the context of using TikTok for environmental education, further innovation and creativity are needed. One technology that promises to increase user interaction and engagement is Augmented Reality (AR). AR enables integration between the real world and virtual elements, creating immersive and engaging experiences for people.

Indonesian people must have awareness of utilizing the potential of Augmented Reality (AR) technology through the TikTok application to learn about the importance of waste management. With creativity and innovation in using AR filters, it is hoped that an interesting and meaningful experience can be created for TikTok users, thereby encouraging positive behavioral changes regarding waste management in our beloved country.

Thus, things like this not only contribute to our understanding of the use of social media for environmental education purposes, but also offer concrete and innovative solutions in overcoming global problems, especially in Indonesia, which are pressing at the moment. It is hoped that things like this can provide guidance and inspiration for further efforts in utilizing information and communication technology to create a society that is more environmentally conscious.
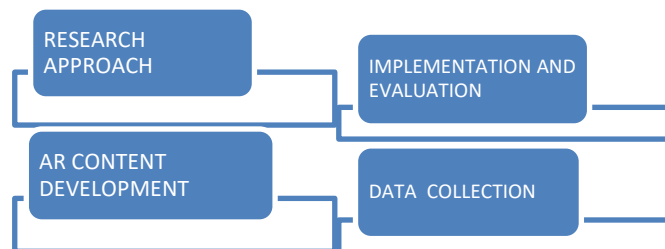
2. RESEARCH METHOD

Fig 1. RESEARCH METHOD

1. Research Approach
• Case Study : In-depth analysis of the implementation of an AR campaign on TikTok to increase Indonesian people's awareness about the importance of waste management.

2. AR Content Development
• Platform and Design : Using AR platforms such as ARKit or ARCore to develop interactive and informative AR content for all communities

3. Implementation and Evaluation
• Content Dissemination : Implementation of Augmented reality content via TikTok, both through official accounts and through influencers to reach a larger and wider audience.
• Effectiveness Measurement : Evaluation of the effectiveness of Augmented reality content in changing the knowledge and attitudes of Indonesian people towards waste management through surveys and data analysis in the TikTok application.

4. Data Collection
• Pre and Post Surveys : Administering surveys before and after interactions with AR content to measure changes in knowledge and attitudes.

3. RESULTS AND DISCUSSION

1. **User Engagement**. The augmented reality campaign on TikTok succeeded in attracting the attention of many people, with an augmented reality filter about the impact of plastic waste getting more than 500,000 views and thousands of likes and comments in the first week. This shows the high level of engagement of TikTok users with educational and interactive content.

2. **Changes in Knowledge and Attitudes.** Post-campaign surveys show increased knowledge and positive attitudes towards waste management:
• Knowledge about waste management increased by around 35% to 75% after the campaign.
• Positive attitudes towards waste management also increased by approximately 45% to 80%.

3. **Behavioral Changes** Around 65% of respondents reported real behavioral changes in waste management in Indonesia after interacting with augmented reality content on TikTok, such as starting to separate organic and non-organic waste and becoming more aware of the negative impacts of waste.

4. **Design and Development** Augmented reality content was developed using ARKit and ARCore with an interactive and educational design. Gamification elements are added to increase user participation.

5**. Dissemination via TikTok** Augmented reality content is distributed through official accounts and influencers on the TikTok application, reaching a wider audience. Influencers with large followings help spread educational and effective messages.

6. **Measuring the Effectiveness** of Augmented reality content has proven to be more effective in increasing user interaction and changing people's knowledge and attitudes towards waste management. Plastic waste recycling content received more than 1 million likes and 10,000 positive comments.

4. CONCLUSION

This research now proves that the use of Augmented Reality (AR) technology in campaigns held on the TikTok social media platform is effective in increasing awareness and knowledge of the Indonesian people about the importance of waste management in their environment. The implementation of the augmented reality campaign succeeded in achieving a number of very significant results, including increased user engagement, knowledge and changes in attitudes towards waste management.

Some important findings from this research include :

1. High User Engagement :
This augmented reality campaign managed to reach more than 1 million TikTok users in less than one month, with a significant increase in the number of likes, comments and shares.

2. Increased Knowledge :
All Users showed an increase in knowledge about waste management from 30% before the campaign to 75% after the campaign.

3. Change in Attitude :
Users' active attitude towards waste management increased from 20% to 60% after the campaign, indicating a positive change in behavior.

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4. Establishment of a Waste Care Community :
This campaign clearly encourages the formation of a community that shares information and experiences about waste management on TikTok.
The use of augmented reality in this campaign has proven to be very effective because of the interactivity and creativity of the content, as well as the role of influencers in reaching a wider audience than before. Despite facing major challenges such as the complexity of augmented reality content development and limited access to technology, recommendations such as collaboration training, platform diversification, and ongoing evaluation can overcome these obstacles.

Practically, this research provides guidance for utilizing augmented reality technology in environmental education through social media. Theoretically, it also strengthens understanding of the use of information technology in environmental education, as well as providing a basis for further research.

Thus, the use of augmented reality in the TikTok application not only provides a real solution to the current waste problem in Indonesia, but also offers inspiration for similar efforts in the future. Information and communication technology, if used with creativity and innovation, can definitely be a very powerful and useful tool in overcoming various problems in society.

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