Edutec
Journal of Education And Technology
2597-9221 (Online)
Volume 8 Number 1 September 2024

Development of the "Let's Care for the Environment" Animated Video to Introduce Environmental Care Character to Early Childhood

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Article History	Received : June 17th 2024
	Revision : Aug 17th 2024
	Publication : Sept 30th 2024

Abstract
Educational media that supports children in developing environmental care character is still limited, as observed in a preliminary study conducted at a kindergarten in Bekasi. To address this, the researchers aim to develop an animated video as a solution for educational media. The purpose of this study is to foster children's awareness of environmental conservation. The research follows the ADDIE model, and the video was evaluated by an early childhood education expert, an animation media expert, a language expert, and two teachers. The evaluation yielded an average score of 90%, indicating a very valid criterion. Based on these results, the "Ayo Jaga Lingkungan" animated video is deemed appropriate for use as a learning medium to introduce environmental care character to young children.

Keywords: E-comic Learning Media, Student Achievement, Social Studies, Learning Completion

INTRODUCTION

Environmental issues caused by human activities today have significant implications for the future. Major environmental problems, such as air pollution, deforestation, improper waste disposal, and mining, have severely impacted biodiversity across terrestrial, freshwater, and marine ecosystems (Binsasi & Korbaffo, 2022). These concerns have been widely discussed since the mid-20th century, emphasizing the need for comprehensive environmental management that engages all stakeholders, including policymakers and the global community, in collective and meaningful action (Ketut & Hariyanto, 2018).

Sustainable environmental management requires not only an understanding of environmental systems but also awareness of the repercussions of human interventions. This approach necessitates a sense of responsibility and a

commitment to safeguarding the well-being of future generations (Lestari, 2021). One effective way to mitigate environmental degradation is through environmental education, which aims to cultivate environmentally conscious and responsible citizens (Ira Ririhena, 2021). Environmental education plays a pivotal role in developing students' environmental awareness and fostering behaviors that prevent environmental damage, promoting initiatives to restore degraded ecosystems.

The government has recognized the critical importance of instilling environmental awareness in young generations. As a result, policies have been established to incorporate environmental character education into school curricula. This form of education emphasizes practical skills, such as waste management and recycling, alongside values like environmental care, cooperation, and accountability (Irfianti et al., 2016). Moreover, it seeks to raise awareness of the adverse effects of environmentally destructive actions, inspiring students to engage in positive environmental activities, such as community-based environmental projects or awareness campaigns.

The necessity of environmental character education at an early age is underscored by the critical developmental phase children experience. Effective character education requires collaboration between teachers and parents, as children are more likely to adopt positive behaviors when modeled by influential adults in their lives (Ramadhani & Masykuroh, 2022). Instilling a sense of environmental responsibility in children from an early age helps them recognize the importance of environmental stewardship, both now and for the future.

Implementing this character education requires well-designed teaching strategies and supportive educational media. Educational media are tools or resources used to convey information and stimulate interest in learning, making the learning process more engaging and effective (Zahwa & Syafi'i, 2022). According to the National Education Association, media serve as manipulable, observable, and interactive objects that enhance the learning experience (Apriliani & Radia, 2020). Effective teaching media enable seamless integration into various teaching strategies, facilitating the delivery of complex concepts and fostering student engagement.

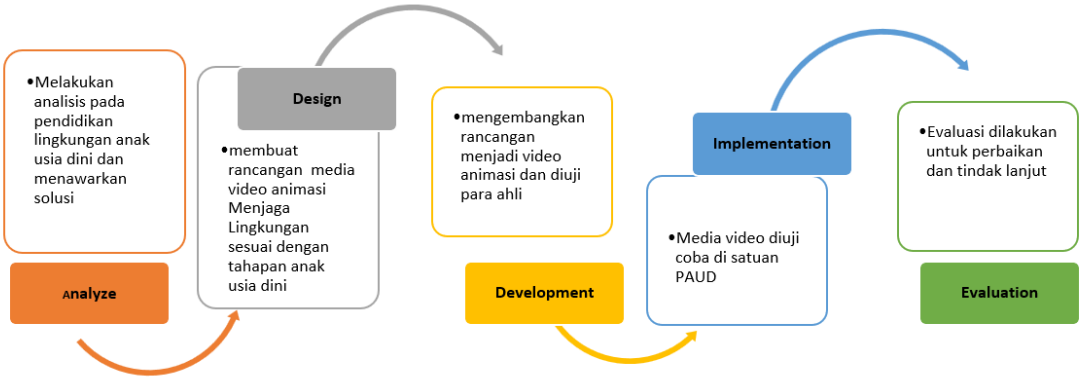
Despite these benefits, preliminary studies conducted in a preschool in Bekasi revealed that teachers' use of media to teach environmental care remains limited. This research aims to develop animated digital video media to teach young children environmental responsibility, particularly in caring for their surroundings. Video media are advantageous as they can convey information dynamically, illustrate processes, explain complex concepts, and influence behavior effectively (Miranda, 2019). Animation, in particular, captivates children and encourages them to emulate positive behaviors displayed by characters (Wuryanti & Kartowagiran, 2016). This

study seeks to leverage animated videos to foster children's awareness and proactive attitudes toward environmental preservation.

METHOD

This research employed the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) due to its suitability for systematically developing and testing educational products (Saputra & Putra, 2021). The ADDIE model follows structured stages, as illustrated in Figure 1.

Figure 1. Stages of the ADDIE Model



The animation video product was assessed for feasibility by a panel of experts, which included one Early Childhood Education (ECE) content expert, one linguist, one animation media expert, and two ECE practitioners. The research and product testing were conducted at a single institution, Sabilina Kindergarten, located in Bekasi City. The validation instruments used for the animated video media are detailed in Table 1.

Table 1. Product Validation Instruments

Validation Instrument	Assessment Indicators	Validator
ECE Content Instrument	1. Learning Aspects 2. Material Aspects 3. Visual/Display Aspects	ECE Content Expert
Animation Media Instrument	1. Visual Aspects 2. Audio Aspects 3. Typography Aspects 4. Presentation Aspects	Animation Media Expert
Language Instrument	1. Language Use 2. Language Simplicity	Linguist
ECE Practitioner Instrument	1. Learning Material Aspects 2. Media Aspects	ECE Teachers

Upon validation by experts, the product was tested with early childhood learners. Researchers distributed a questionnaire to teachers, who provided evaluations and feedback on the animated video. The product was considered feasible if it received positive feedback and scores. The feedback from the validators

guided revisions to enhance the video's quality. The assessment criteria used by both the experts and teachers are presented in Table 2.

Table 2. Video Assessment Criteria

Response	Score
Very Good	4
Good	3
Fair	2
Poor	1

The overall average score from expert evaluations was calculated to derive a representative value. This involved summing all respondent scores and dividing by the total number of respondents. Decisions were made based on achievement levels, converted using the scoring indicators detailed in Table 3.

Table 3. Validity Level Categories

Percentage	Category
86%-100%	Highly Valid
71%-85%	Valid
56%-70%	Moderately Valid
<55%	Less Valid

RESULTS AND DISCUSSION

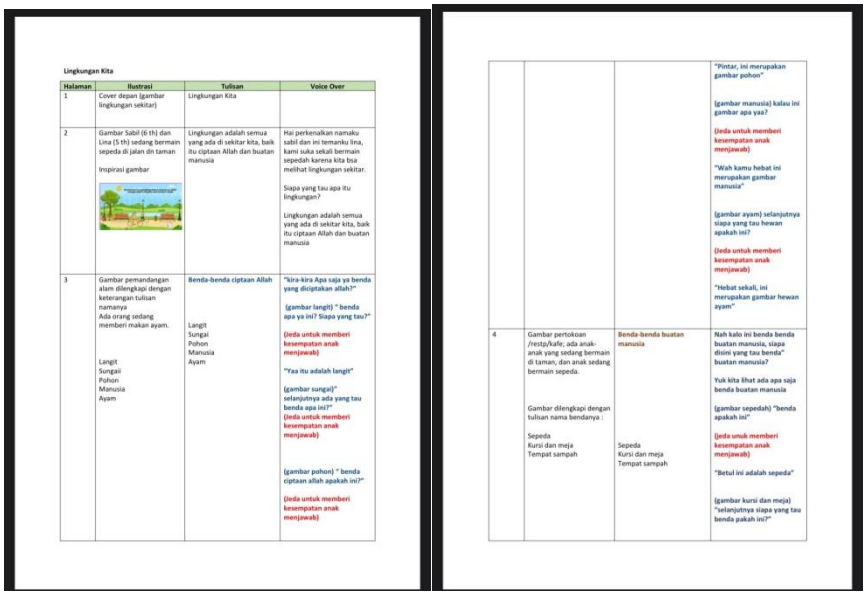
This research resulted in the development of an animated video titled *Ayo Jaga Lingkungan*, designed as an educational support tool to teach the importance of environmental care. The video serves as a resource for teachers and parents to introduce young children to the adverse consequences of human environmental neglect. The creation of this educational media adhered to the ADDIE development model.

The following are the stages of developing the *Ayo Jaga Lingkungan* animation video using the ADDIE model:

1. Analysis: The analysis stage involved observations and interviews conducted at a preschool in Bekasi City. The purpose was to gather information on existing challenges, which allowed the researchers to identify problems and devise effective solutions. The primary issue identified was the lack of engaging educational media available for teachers to convey the importance of environmental preservation, leading to student disinterest and boredom. Based on this analysis, the researchers developed an animated video as a means to capture children's interest and effectively communicate the significance of environmental care.
2. Design: During the design phase, the content of the media was structured to suit early childhood learning needs. This step included creating educational materials aligned with the learning objectives and developing a storyline or

script that detailed the setting, characters, problems, and timeline. All elements were then organized into a storyboard, as depicted in Figure 1.

Figure 1. Storyboard of the Animation Video



Lingkungan Kita

Halaman	Ilustrasi	Tulisan	Voice Over
1	Cover depan (gambar lingkungan sekitar)	Lingkungan Kita	
2	Gambar Sabil (6 th) dan Lina (5 th) sedang bermain sepeda di jalan dn taman Inspirasi gambar	Lingkungan adalah semua yang ada di sekitar kita, baik itu ciptaan Allah dan buatan manusia	Hai perkenalkan namaku sabil dan ini temanku lina, kami suka sekali bermain sepedah karena kita bsa melihat lingkungan sekitar. Siapa yang tau apa itu lingkungan? Lingkungan adalah semua yang ada di sekitar kita, baik itu ciptaan Allah dan buatan manusia
3	Gambar pemandangan alam dilengkapi dengan keterangan tulisan namanya Ada orang sedang memberi makan ayam. Langit Sungai Pohon Manusia Ayam	**Benda-benda ciptaan Allah** Langit Sungai Pohon Manusia Ayam	"kira-kira Apa saja ya benda yang diciptakan allah?" (gambar langit) " benda apa ya ini? Siapa yang tau?" **(jeda untuk memberi kesempatan anak menjawab)** "Yaa itu adalah langit" (gambar sungai)" selanjutnya ada yang tau benda apa ini?" **(jeda untuk memberi kesempatan anak menjawab)** (gambar pohon) " benda ciptaan allah apakah ini?" **(jeda untuk memberi kesempatan anak menjawab)**
			"Pintar, ini merupakan gambar pohon" (gambar manusia) kalau ini gambar apa yaa? **(jeda untuk memberi kesempatan anak menjawab)** "Wah kamu hebat ini merupakan gambar manusia" (gambar ayam) selanjutnya siapa yang tau hewan apakah ini? **(jeda untuk memberi kesempatan anak menjawab)** "Hebat sekali, ini merupakan gambar hewan ayam"
4	Gambar pertokoan /resto/kafe; ada anak-anak yang sedang bermain di taman, dan anak sedang bermain sepeda. Gambar dilengkapi dengan tulisan nama bendanya : Sepeda Kursi dan meja Tempat sampah	**Benda-benda buatan manusia** Sepeda Kursi dan meja Tempat sampah	Nah kalo ini benda benda buatan manusia, siapa disini yang tau benda" buatan manusia? Yuk kita lihat ada apa saja benda buatan manusia (gambar sepedah) "benda apakah ini" **(jeda unuk memberi kesempatan anak menjawab)** "Betul ini adalah sepeda" (gambar kursi dan meja) "selanjutnya siapa yang tau benda pakah ini?"

3. Development: The storyboard was transformed into digital sketches, with the assistance of animation experts to visualize the educational content. This collaboration ensured that the video content was both engaging and educationally effective.

Figure 2. Development Process of the Animation Video

The completed video, *Ayo Jaga Lingkungan*, has a duration of 5 minutes and 37 seconds and was subjected to expert evaluation.

Figure 3. Final Video: *Ayo Jaga Lingkungan*

4. Implementation: The implementation phase involved testing the video with students at TK Islam Sabilina, where it was screened to evaluate its educational impact.

Figure 4. Video Screening at TK Sabilina

The results of the expert validation tests on the *Ayo Jaga Lingkungan* animation video are presented in Table IV.

Table 4. Expert Validation Results

Respondent	Percentage	Description
ECE Content Expert	91.6%	Highly Valid
Animation Media Expert	96.4%	Highly Valid
Linguist	83.3%	Valid
ECE Teacher 1	90.62%	Highly Valid
ECE Teacher 2	87.5%	Highly Valid
Average	**90%**	**Highly Valid**

The validation results indicate that the video animation was rated at 91.6% by the Early Childhood Education (ECE) content expert, who assessed aspects of learning, content, and visual design, categorizing it as highly valid. This confirms the content's appropriateness for teaching environmental awareness to young children. The animation media expert provided a 96.4% rating, highlighting the high quality of the visual, audio, typography, and presentation elements, making it an effective teaching tool. The linguistic evaluation, focusing on language use and simplicity,

yielded an 83.3% rating, categorizing it as valid for educational purposes. Feedback from ECE teachers scored 90.62% and 87.5%, both indicating the video is highly valid for classroom use.

5. Evaluation: The final stage involved reviewing the video media based on expert feedback. The ECE content expert suggested simplifying some content, while the animation media expert recommended increasing the font size for better readability for young learners. The linguist advised reducing the size of certain images to maintain visual balance.

This study's findings align with previous research highlighting the importance of interactive and visually appealing educational media in early childhood education. For instance, Wuryanti and Kartowagiran (2016) emphasized the effectiveness of animated videos in influencing children's behaviors and promoting engagement in learning activities. Their research demonstrated that character-based animations can significantly enhance children's interest and comprehension of environmental topics, similar to the outcomes observed in this study, where the *Ayo Jaga Lingkungan* video successfully engaged young learners and increased their environmental awareness.

Similarly, Dewi and Handayani (2021) found that multimedia resources, including animated videos, positively impact children's motivation and learning outcomes, reinforcing the current study's results. The high validation scores received from experts in this study further support Dewi and Handayani's assertion that well-crafted multimedia tools are essential for effective teaching, especially for complex concepts like environmental preservation.

Furthermore, Miranda (2019) discussed the role of digital animations in simplifying difficult concepts and extending or condensing time to provide a clearer understanding of processes, a feature that was also incorporated into the *Ayo Jaga Lingkungan* video. The video's ability to visually present environmental consequences and solutions was noted as a key factor in its educational effectiveness.

The Validation score of 90% confirms that the *Ayo Jaga Lingkungan* animation video is valid and suitable for fostering environmental awareness and responsibility in early childhood education. The findings are consistent with prior studies, affirming the effectiveness of animated media in enhancing student engagement and learning outcomes. This research contributes to the growing body of evidence supporting the integration of multimedia tools in early education and provides a practical solution to address the lack of engaging educational resources for environmental education.

CONCLUSION

This research and development project successfully produced an animated video as an educational medium aimed at enhancing environmental awareness among young children. The comprehensive development process, based on the ADDIE model, ensured that the product met educational standards and effectively engaged the target audience. After rigorous testing and validation, the animated video was confirmed to be highly suitable for use in early childhood education, receiving positive feedback from both expert evaluators and practitioners. The video serves as a valuable pedagogical tool that supports teaching about the importance of environmental conservation. It offers a practical and engaging way for teachers and parents to instill environmental consciousness in children, fostering attitudes and behaviors that promote environmental stewardship from an early age. The implementation of this media is expected to contribute to broader educational efforts to develop environmentally responsible future generations.

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