Integration of Digital Media in Co-curricular Activities to Foster Environmental Awareness in Junior High School Students.

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Abstract: Environmental awareness among students remains relatively low, creating an urgent need for innovative character education strategies that are relevant to their daily lives and local conditions. This study explores the effectiveness of integrating digital media into co-curricular activities as a way to foster stronger environmental awareness among junior high school students. A descriptive qualitative approach was used, involving participatory observation, analysis of students' digital products, and review of reflection sheets. The participants were 30 students from Grades VII–IX at SMPN 7 Belimbing, a semi-rural school situated on the outskirts of the city. The school environment presents several challenges, including unmanaged waste around student walking routes and ecological disturbances linked to nearby small-scale informal gold mining (PETI). Throughout the program, students created digital posters and vlogs that explored these real issues, expressed their perspectives creatively, and demonstrated growing responsibility toward the environment. The findings indicate that the use of digital media significantly improved student engagement, creativity, environmental sensitivity, and willingness to take concrete actions such as sorting waste, joining school cleanliness activities, and promoting environmental messages on digital platforms. Overall, the study concludes that digital media–based co-curricular activities offer an effective and contextually relevant approach to enhancing environmental awareness and supporting character development.

Keywords: Character education; Co-curricular activities; Digital media; Environmental awareness; Junior high school students.

Introduction

The lack of environmental awareness among adolescents presents a significant challenge in 21st-century education. Numerous studies have shown that students often exhibit reactive and unsustainable behaviors, such as littering, excessive use of single-use plastics, and minimal involvement in environmental conservation efforts. Schools play a strategic role in cultivating environmental responsibility by offering contextual and meaningful learning experiences.

One promising approach is the integration of digital media into co-curricular activities. Digital platforms allow students to creatively express environmental ideas and messages through products such as digital posters, vlogs, and social campaigns. These activities not only enhance critical and collaborative thinking but also foster ecological awareness through engaging experiences that resonate with the digital-native generation.

The advancement of information and communication technology (ICT) has created new opportunities for transforming character education. According to the theory of digital project-based learning, the process of creating digital content enables students to integrate cognitive, affective, and psychomotor domains (Mishra & Koehler, 2006). In the context of co-curricular activities, tools such as poster design applications, video editing software, and social media platforms offer relevant and relatable avenues for character development.

Despite this potential, many school-based co-curricular programs continue to rely on conventional formats—such as cleanliness competitions or tree planting—without incorporating digital innovation. The use of digital media can expand the reach of environmental messages and increase student engagement in sustainability campaigns. Therefore, a balanced model is needed that integrates character values with digital literacy.

Based on this context, the present study aims to explore how digital media can be integrated into co-curricular activities to foster environmental awareness among junior high school students. The findings are expected to contribute to the development of technology-based character education strategies and serve as a reference for implementing innovative and sustainable co-curricular programs.

Methods

This study employed a qualitative descriptive approach with a participatory model, emphasizing the active involvement of both teachers and students in implementing digital media-based co-curricular activities. The research was conducted at SMP Negeri 7 Belimbing during the odd semester of the 2025/2026 academic year.

Participants included students from grades VII to IX who took part in a weekly co-curricular program themed “Caring for the Environment.” Activities focused on the creation of digital posters and environmental vlogs that reflected values such as care for nature, cleanliness, and social responsibility.

Data were collected using three primary instruments:
1. Participatory Observation Guide – to assess students’ engagement, collaboration, and environmental awareness during activities.
2. Digital Product Assessment Rubric – to evaluate creativity, message clarity, and technical proficiency in digital media integration.
3. Student Reflection Sheet – to explore students’ understanding, awareness, and personal experiences related to environmental values.

Data analysis followed the Miles and Huberman model, comprising three stages:
1. Data reduction – selecting and focusing on relevant information;
2. Data presentation – using rubric tables, observation notes, and student reflection excerpts;
3. Conclusion drawing – interpreting behavioral and character changes among students.

To ensure data validity, triangulation of sources and techniques was applied by comparing teacher observations, student digital outputs, and reflective statements.

Results and Discussion

1. *Implementation of Digital Co-curricular Activities*

The “Caring for the Environment” co-curricular program was conducted weekly, with students working in small groups to produce digital posters and vlogs addressing real-world environmental issues around the school, such as waste management, reforestation, energy conservation, and plastic reduction.

Teachers served as facilitators and observers, while students took on roles as planners, designers, and communicators. The process involved brainstorming, digital production, presentation, and reflection. Observations revealed that digital project-based activities significantly boosted student enthusiasm, participation, and collaboration, largely due to the use of familiar digital tools and platforms.

2. *Participatory Observation Results*

The average score reached **79.44 (Good)**, indicating that students demonstrated consistent creativity and a strong sense of environmental awareness throughout the activities. The rural context of SMPN 7 Belimbing—characterized by students’ daily habit of walking to school and the school’s location in a semi-rural area on the outskirts of the city—served as an important source of inspiration for their digital

content. These everyday experiences allowed students to develop more authentic and contextually grounded digital products. In their projects, they documented real environmental issues found in their surroundings, including the improper disposal of plastic waste and the presence of small-scale informal gold-mining activities (PETI). By highlighting these issues, students were able to connect their personal observations with broader environmental messages, demonstrating meaningful engagement and increasing their sense of responsibility toward their local environment.

These findings align with Yuliani (2023), who noted that digital projects enhance students' sense of responsibility and empathy toward environmental issues. Moreover, students began adopting tangible behaviors such as waste sorting and using reusable water bottles—clear indicators of environmental stewardship.

3. ***Digital Product Results (Posters and Vlogs)***

Assessment of student-created digital products yielded an average score of 71.11%, also in the "Good" category. Posters excelled in creativity and visual impact, while vlogs were particularly effective in promoting reflection and actionable messages.

One standout example was a project themed "Waste Management," which successfully communicated environmental concerns through compelling visuals and narratives. These results demonstrate that digital media not only enhances technical skills but also serves as a powerful medium for contextual character development.

4. ***Student Reflection Results***

Analysis of student reflections revealed increased environmental awareness. Of the 30 students who submitted reflections, 83% reported heightened awareness of how their daily behaviors affect the environment, and 76% expressed intentions to take concrete actions such as conserving energy, reducing plastic use, or planting trees.

Statements like "I feel embarrassed about littering after making the digital poster" and "My friend's vlog inspired me to join the energy-saving campaign at home" illustrate shifts in ecological attitudes and behaviors. These outcomes reinforce Kolb's (1984) experiential learning theory, which emphasizes the transformative power of direct experience in character formation.

5. ***General Discussion***

The study confirms that integrating digital media into co-curricular activities is an effective strategy for cultivating environmental stewardship. Through poster and vlog creation, students develop creativity, collaboration, and reflective thinking.
This approach aligns with UNESCO's Education for Sustainable Development (ESD) framework, which emphasizes digital literacy, ecological consciousness, and social responsibility. Beyond character development, the program also enhances key 21st-century skills such as communication, creativity, and critical thinking.

Thus, digital co-curricular activities serve not only as a method for character education but also as a bridge connecting environmental values with students' digital lifestyles.

6. *Implications*

This study presents two key implications:

a. *For schools*: Digital co-curricular programs can be adopted as models for technology-integrated character education.
b. *For teachers*: The findings offer a foundation for designing activities that foster creativity and empathy toward environmental issues.

Table 1. Results of Participatory Observation

Group name	Active Participation	Collaboration	Creativity	Environmental Concern	Self-Reflection	Total Score	Final score
Group 1	3	3	4	3	3	16	80
Group 2	4	4	4	3	3	18	90
Group 3	4	3	4	3	4	18	90
Group 4	3	2	3	3	3	14	70
Group 5	4	3	3	4	3	17	85
Group 6	3	3	3	3	3	15	75
Group 7	3	2	2	3	3	13	65
Group 8	4	3	3	3	4	17	85
Group 9	3	2	4	4	2	15	75

Final Value $= \frac{80+90+90+70+85+75+65+85+75}{9} = \frac{715}{9} = 79{,}44$

Good Category

Table 2. Summary of Digital Product Assessment

Group name	Involvement and Participation	Creativity and Innovation	Environmental Message	Technical Skills	Reflection	Total Score	Final score
Group 1	3	4	3	3	3	16	80
Group 2	3	3	3	3	2	14	70

Group 3	4	4	3	3	3	17	85
Group 4	3	3	3	3	3	15	75
Group 5	2	3	3	3	2	13	65
Group 6	2	2	3	3	2	12	60
Group 7	2	3	3	2	2	12	60
Group 8	3	3	4	3	3	15	75
Group 9	2	3	3	3	3	14	70

Final Value $=\frac{80+70+85+75+65+60+60+75+70}{9}=\frac{640}{9}=71,11$

Good Category

Table 3. Student Reflection Results

Reflection Theme	Example of Student Statement	Number of Students who expressed	Percentage (%)	Interpretation/Meaning
New Awareness	I just found out the difference between organic and non-organic waste	10	33	Increasing environmental knowledge and awareness
Environmental Concern	I feel happy keeping the school clean	8	27	Empathy and concern for the environment emerge
Real Action	I started throwing rubbish in its place	7	23	There are concrete actions to protect the environment
Digital Inspiration	Another video made me want to join the electricity saving campaign	5	17	Positive influence between students through digital media

Image 1. Student activity making digital posters about caring for the environment

Image 2. Student activity presenting the poster they made

Image 3. Vlog Making Assistance

Image 4. Screenshot of Student Social Media Upload Results

Conclusion

This study affirms that integrating digital media into co-curricular activities is a highly effective strategy for fostering environmental awareness among junior high school students. Through the creation of environmentally themed digital posters and vlogs, students demonstrated notable improvements in creativity, collaboration, and ecological consciousness.

Digital-based co-curricular activities offer students contextual and engaging learning experiences that promote the internalization of environmental values. The digital products they produce serve not only as creative expressions but also as reflective tools that encourage environmentally responsible behavior in everyday life.

Accordingly, digital co-curricular programs can serve as innovative models for enhancing character education through technology. It is hoped that educators and schools will continue to develop and implement similar initiatives to cultivate students' sustained commitment to environmental conservation and social responsibility in the digital era.

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