



## Analysis of Interactive Multimedia Needs in Strengthening Character Responsibility in Pancasila Education Learning in Elementary Schools

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**Abstract:** This study was motivated by the limitations of innovative learning media in internalizing students' character of responsibility in Pancasila education learning in elementary schools. The purpose of this study was to analyze the need for interactive multimedia as a supporting medium for strengthening the character of responsibility. The research employed a descriptive qualitative method, with data collected through questionnaires, semi-structured interviews, and observations. The data were analyzed descriptively, using triangulation to enhance validity. The research subjects comprised 157 fourth-grade students and 10 teachers from elementary schools in the Kemantren Kraton area of Yogyakarta City. The results of the study indicate that students' sense of responsibility remains low, teacher-parent collaboration is not yet optimal, and there is a strong need for effective, contextually relevant interactive multimedia. These findings emphasize the need to develop interactive multimedia that not only supports the understanding of Pancasila Education material but also optimally strengthens the formation of character of responsibility in elementary school students.

**Keywords:** interactive multimedia, character of responsibility, Pancasila education, elementary school

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### Introduction

Indonesian society is renowned for its rich cultural heritage and ideological diversity. Pancasila, as the foundation of the state, serves as the basis for legal and political life, as well as the fundamental values that shape the character of the nation (Sakinah et al., 2021; Ministry of Education, Culture, Research, and Technology, 2022; Sarkadi et al., 2022). These values are embodied in Pancasila Education, which plays a strategic role in shaping the nation's character and identity (Aditia & Dewi, 2022). At the elementary school level, this subject is not just about memorizing material, but also instilling moral and social values such as cooperation, tolerance, and responsibility, which are important foundations for national and state life (Arum et al., 2025). Based on the Decree of the Head of BSKAP No. 046 of 2025 concerning CP-SD-Pancasila Education, Pancasila Education is a subject that includes Pancasila and Civic Education content, aimed at shaping students to become intelligent, trustworthy, honest, virtuous, and responsible citizens. Responsibility is very important for elementary school students because this is the age when their character and life skills are formed. Responsibility at the elementary school level is not only about completing tasks, but also the basis for future academic, social, and personal success (Rokhmani & Suhardi, 2021; Sartika et al., 2024; Trisniawati et al., 2023).

A number of studies have examined character education in elementary schools with the support of various learning media, including multimedia. However, the focus of the study still tends to be on general values such as honesty, discipline, and caring. At the same time, the development of responsibility within Pancasila Education has not received sufficient attention. The research by Fauziah & Ninawati (2022) developed animated media containing Pancasila values and found that the media was suitable for use and received positive responses from students, but it did not examine in depth the internalization of the value of responsibility in students' daily practice (Fatonah et al., 2025). The study

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on the analysis of interactive multimedia needs based on Pancasila student profiles is also still limited to the identification stage, so it has not tested its effectiveness in shaping student responsibility. Even the research by Jayuni et al. (2022), which examined the value of responsibility in thematic learning, focuses primarily on supporting and inhibiting factors rather than treating multimedia as the main variable. Thus, there is a significant research gap in exploring how multimedia development can be an effective strategy for fostering students' sense of responsibility through Pancasila Education in elementary schools.

The results of the 2024 elementary school education report card in Kemantren Kraton, Yogyakarta City, show that the average quality of learning is only 63.05 (moderate category), while student character scores are in the good category (57.66). This indicates that there is room for improvement in the quality of learning and character building. Observations of these schools also show that the learning process is still dominated by lecture and one-way assignment methods. Observations of Pancasila education indicate that teachers have not yet developed or used learning media that effectively enhance students' sense of responsibility. Learning activities are teacher-centered. Teachers predominantly use lecture and assignment methods during learning. Students appear to be less enthusiastic about learning. This is evidenced by the students' tendency to be passive during learning. The assessment results are also less than optimal. Although some schools have access to technological tools such as projectors and computers, these are underutilized. This shows that relevant and meaningful approaches have not yet fully fostered the desired character.

The discrepancy between curriculum objectives and actual instructional practices in elementary schools underscores the need for innovative approaches to character education, particularly in fostering student responsibility through Pancasila Education. The curriculum emphasizes the development of responsible, honest, and virtuous students, but in the classroom, lecture-style teaching and passive assignments still dominate, providing little room for active student involvement (Agustiana et al., 2023; Hakiky et al., 2023; Oudeyer et al., 2016). This condition has resulted in the value of responsibility not being internalized optimally. The results of the Education Report Card in Kemantren Kraton, Yogyakarta, which show that the quality of learning is still in the moderate category, indicate the need for a new approach that is more meaningful and contextual. On the other hand, developments in educational technology have opened up opportunities to utilize interactive multimedia as a tool that not only presents material in an interesting way but also encourages students to actively participate in the learning experience. Several previous studies have developed animation-based learning media or conducted analyses of interactive multimedia needs, but they have not focused in depth on measuring the effectiveness of character building in the context of Pancasila education. Thus, research on the development of interactive multimedia based on Pancasila values that is specifically aimed at fostering a sense of responsibility in elementary school students is very urgent, both to bridge the gap between curriculum objectives and learning practices and to respond to the need for educational innovation that is relevant to the demands of the 21st century.

Responsibility is one of the key characteristics that must be developed from an early age. According to Lickona (1992), responsibility involves fulfilling obligations, making wise decisions, and accepting the consequences of one's actions. Rich (2008) adds that responsible students are reliable, complete tasks independently, and build mutually supportive relationships with others. In the context of the Pancasila Student Profile, responsibility is reflected in students' ability to fulfill their obligations, obey rules, and show commitment to individuals and groups (Nurdyansyah et al., 2022; Nurhayati et al., 2022; Permatasari et al., 2024; Rachman et al., 2024). Therefore, learning that instills these values must be designed consciously and systematically based on real experiences.

One strategy that can meet the need for meaningful learning while internalizing character values is interactive multimedia (Patricia & Zamzam, 2021; Primamukti & Farozin, 2018; Wulandari et al., 2022). Alyusfitri et al., 2024; Primamukti & Farozin, 2018). This form of digital media combines text, images, audio, video, animation, and interactivity, allowing users to actively engage in the learning process. Interactive multimedia presents information and creates contextual learning experiences that engage students emotionally (In Pancasila education, interactive multimedia can be integrated with social simulations, educational games, and reflective quizzes to encourage more effective character development (Sartono et al., 2022; Septiani et al., 2020). Various studies support the effectiveness of interactive multimedia in improving students' conceptual understanding, participation, and learning outcomes (Aprilia et al., 2023; Mustadi et al., 2024). Interactive multimedia has also been proven highly

effective when developed according to instructional design principles that consider content, pedagogical approaches, and aesthetic presentation (Crozat et al., 1999; Surjono, 2017; Vargo et al., 2003). Within the framework of multimedia learning, Mayer (2002) emphasizes the importance of modality, personalization, and segmentation in making content easier to understand. Chapman & Chapman (2014) classify media as visual, audio, or audiovisual and state that combining all three interactively can facilitate deeper learning.

Although interactive multimedia has been recognized as having many advantages in the digital age, such as high accessibility, adaptability, and relevance to the characteristics of *digital natives* (Cahyani & Dewi, 2021; Putri, 2019), existing research still shows limitations in its implementation in the context of Pancasila Education in elementary schools. Most studies emphasize the potential of multimedia in increasing learning motivation, cognitive understanding, and student interest, but have not been specifically designed to foster certain character values, particularly responsibility. In fact, responsibility is one of the fundamental values in the Pancasila philosophical framework, which is the main objective of the elementary school curriculum. Access to media specifically formulated to strengthen students' responsibility through Pancasila Education remains very limited. In addition, existing interactive multimedia development programs tend to be partial and do not target the aspect of deep character internalization (Açıkgöz & Güler, 2024; Juwanda et al., 2025; Siburian & Gandamana, 2024). Barriers on the part of teachers, such as limited digital literacy and difficulties in designing technology-based learning tools, further widen the gap between the potential of interactive multimedia and its use in schools (Rokhmani & Suhardi, 2021b). Thus, an underexplored area is the design, implementation, and evaluation of interactive multimedia that comprehensively aims to strengthen students' sense of responsibility within the Pancasila Education framework in elementary schools. Accordingly, this study investigates the need for and potential of interactive multimedia to strengthen the character of responsibility in Pancasila Education at the elementary school level.

### **Methods**

This study was a qualitative descriptive investigation based on preliminary field observations and a review of relevant literature. The study aimed to identify the needs of students and teachers to improve learning effectiveness by leveraging developments in information technology to support independent, creative, and enjoyable learning. Through this approach, students were expected to better understand the Pancasila Education material. Qualitative research was used because the data consisted of opinions, views, comments, criticisms, and reasons that required detailed description. According to Bogdan and Biklen (1982), qualitative methods produced descriptive data in the form of written or spoken words and observable behavior. This approach was selected because it enabled systematic, measurable data collection that provided a clear understanding of the phenomenon under investigation (Sugiyono, 2015). The data used in this analysis consisted of qualitative data that were assessed descriptively (Arikunto, 2013). The study employed a survey method comprising questionnaires, interviews, and observations to assess teachers' and students' needs regarding interactive multimedia designed to increase responsibility in Pancasila Education at the elementary level. The research was conducted at Kemantren Kraton Elementary School in Yogyakarta City from February to May 2025.

The primary data source in this study was information collected directly from 157 students and 10 fourth-grade teachers in the Kemantren Kraton area of Yogyakarta City. The sampling technique used was purposive sampling. Fourth-grade students were selected because they were at a stage of moral development in which they began to understand the consequences of their actions and the importance of taking responsibility for themselves and their environment. Teachers were included according to specific criteria, which consisted of being fourth grade teachers in the Kemantren Kraton area, having implemented the Merdeka Curriculum, having a minimum of three years of teaching experience, being able to use information and communication technology tools such as computers or laptops and the internet, and being willing to utilize web based interactive multimedia as supporting media for Pancasila Education. These data were categorized as primary data because they were obtained directly from respondents without intermediaries and were used to answer the research questions. Primary data were important because they captured empirical conditions in the field and enabled a comprehensive understanding of the phenomenon under examination.

The data analysis procedure followed the technique developed by Miles and Huberman (1984). The stages consisted of reducing data from interviews, observations, and documentation related to the use of interactive multimedia for improving responsibility, presenting data in narrative texts and tables to explore the relationship between interactive multimedia and responsibility, developing analytical tools to examine data relationships, tabulating the frequency of events, and analyzing data complexity through statistical calculations such as percentage analysis of multimedia needs. The data were also organized chronologically to clarify the sequence of events. The validity of the data was ensured through method and source triangulation (Miles et al., 2014). Triangulation was conducted by using several data collection techniques with the same subjects, such as classroom observations and student questionnaires, to assess responsible behavior. Source triangulation involved interviews with both teachers and students to obtain empirical information about the Pancasila Education learning process and the application of responsibility. The interview instruments consisted of main questions designed to explore known issues and follow-up questions that probed emotional and contextual dimensions. Follow-up questions were prepared in advance or developed as the interview progressed. The questionnaire used a quantitative survey method to determine the level of student responsibility in Pancasila Education learning. It used a 4-point Likert scale and was distributed via Google Forms. Data triangulation was essential because responsibility is an abstract construct that required verification from various methods and sources.

## **Results and Discussion**

### **Results**

The needs analysis focused on developing interactive multimedia to improve the character of responsibility in Pancasila Education learning in elementary schools. This research was conducted from February to May 2025, using primary data collected from fourth-grade elementary school students and teachers through questionnaires and in-depth interviews. The data description is presented in Tables 1 and 2.

**Table 1. Frequency of Student Gender**

<b>Gender</b>	<b>Number</b>	<b>Percentage</b>
Female	87	55
Men	70	45
Total	157	100

**Table 2. Frequency of Teacher Gender**

<b>Gender</b>	<b>Total</b>	<b>Percentage</b>
Female	8	80
Men	2	20
Total	10	100

Tables 1 and 2 show that the distribution of questionnaires was relatively balanced between genders. Both male and female students, as well as teachers, participated in filling out questionnaires to analyze the need for Pancasila Education learning media in fourth-grade elementary schools.

To obtain an overview of students' needs and views on Pancasila Education and the use of interactive multimedia to foster a sense of responsibility, questionnaires were distributed to elementary school students. The results of the questionnaire compilation are presented in Table 3 below.

**Table 3. Results of Student Questionnaire Completion**

Indicator	Percentage
Students' perspective on Pancasila Education as an important subject	89
Students can maximize their learning of Pancasila Education while at school	70%
Use of online games or quizzes in Pancasila Education learning	72
Availability of Pancasila Education learning media in	35%
Integration of technology in Pancasila Education learning	27
Students' need for interactive multimedia in Pancasila Education learning	90
The available technology-based learning media has not encouraged a sense of responsibility.	72
Students' views on the importance of responsibility.	83
Parental guidance in instilling responsibility at home	40

In addition to involving students, this study also collected data from teachers to examine their views, experiences, and needs regarding Pancasila education and character building in elementary schools. The results of the teacher questionnaire are shown in Table 4 below.

**Table 4. Teacher Questionnaire Results**

Indicator	Percentage
Implementation of Pancasila Education learning with a differentiated approach	40
Delivery of Pancasila Education material in Grade IV	100
Findings of difficulties in teaching Pancasila Education in Grade IV	92
Use of online games or quizzes in Pancasila Education learning	69
Availability of Pancasila Education learning media in schools	61
Challenges in developing technology-based Pancasila Education learning modules, teaching materials, student worksheets, and assessment instruments.	93
Teachers' need for interactive multimedia in Pancasila Education learning	100
Teachers' perspectives on the responsibilities of fourth-grade elementary school students	46
Cooperation with parents in strengthening the character of responsibility	71

The results of the student questionnaire (Table 3) and the teacher questionnaire (Table 4) show both similarities and differences in perspectives on Pancasila Education and character building. From the students' perspective, the majority have a positive view of Pancasila Education, with 89% stating that this subject is important and 83% assessing that responsibility is a key value that needs strengthening. However, only 35% of students feel that adequate learning media are available, and 27% assess that technology is integrated into learning. This shows a gap between students' needs for technology-based media (90%) and the actual conditions (limited).

On the other hand, the results of the teacher questionnaire show that although all teachers (100%) have provided Pancasila Education materials, only 40% implement differentiated learning. Furthermore, 92% of teachers admit to difficulties in learning, especially related to limitations in media and innovative learning strategies. Similar to students, teachers also showed a very high need for interactive multimedia (100%) and recognized the importance of developing technology-based learning tools (93%).

When compared, both students and teachers emphasize the importance of learning innovation that utilizes technology. Students want the use of online games or quizzes (72%), while 69% of teachers have also tried to implement them, although still to a limited extent. A striking difference is seen in the area of responsibility: 83% of students understand the importance of this value, but only 46% of teachers consider students' sense of responsibility well-developed, so teachers still emphasize the need for collaboration with parents (71%) in character building.

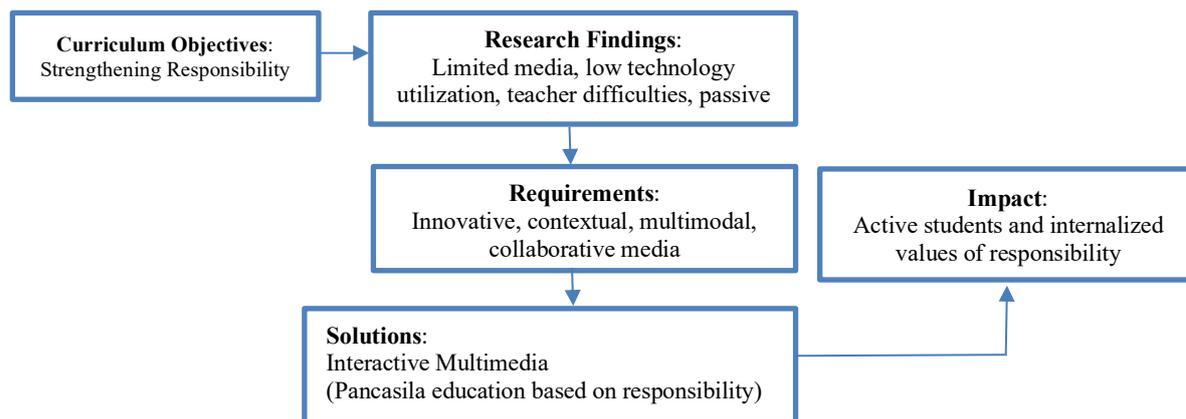
These findings confirm the shared awareness among students and teachers of the urgency of technology-based learning media in Pancasila Education. However, there is a significant gap between the need for and availability of media, as well as between students' understanding of the importance of responsibility and teachers' assessment of its implementation in the classroom. Thus, these results reinforce the urgency of research to develop interactive multimedia for Pancasila education that is contextual, innovative, and oriented towards strengthening the character of responsibility, to bridge the gap between expectations and the reality of learning.

The results of the observation show that lecture methods with limited and passive use of visual media still dominate the learning process. This condition explains the low level of technology integration

recorded in the questionnaire. In addition, character building occurs incidentally, typically through reprimands or assignments, without the support of a systematic learning design.

Interviews with teachers confirmed the existence of cognitive barriers in explaining abstract Pancasila concepts. Teachers emphasized the need for media that could simplify the material while consistently reinforcing students' sense of responsibility. From the students' perspective, interviews revealed a strong preference for high-stimulus media, especially gamification-based media such as animations, interactive quizzes, and adventure themes.

Based on the questionnaire, interviews, and observations, a flowchart illustrating the relationships among curriculum objectives, research findings, needs, solutions, and impacts is presented in Figure 1.



**Figure 1.** Flowchart of Needs, Multimedia Solutions, and Responsibility Reinforcement

The conceptual model in Figure 1 above illustrates the relationship between curriculum objectives, field findings, learning needs, proposed solutions, and expected outcomes. At the curriculum level, Pancasila Education aims to strengthen elementary school students' sense of responsibility as part of the Pancasila learner profile. However, the results of the study indicate a gap between these ideal objectives and classroom learning practices. Field findings indicate that learning media remain limited, technology integration is low, teachers have difficulty implementing differentiated instruction, and learning activities tend to be passive and dominated by lectures.

Based on these conditions, both students and teachers expressed a need for more innovative, multimodal, contextually relevant media that can encourage collaboration among teachers, students, and parents. This need has created opportunities for the development of interactive multimedia as a strategic solution. Interactive multimedia allows for the presentation of material in visual, audio, and animated formats that are not only attractive but also provide an active, personalized, and meaningful learning experience.

When implemented appropriately, interactive multimedia has the potential to strengthen the internalization of responsibility values in Pancasila Education learning. The expected impact is not only an increase in students' cognitive understanding, but also the formation of attitudes and behaviors that reflect responsibility in everyday life. Thus, this model emphasizes that interactive multimedia can serve as a bridge between curriculum objectives and classroom learning practices, as well as between students' conceptual understanding and the implementation of character in real life.

## Discussion

The results of this study make an important contribution to clarifying the challenges faced in teaching Pancasila Education in elementary schools. The findings reveal a gap between the curriculum objectives, which emphasize the development of responsibility, and classroom reality, where lectures still dominate and technology-based learning media are underutilized. This condition reinforces the findings of Ayuningtyas & Rokhmaniyah (2024) and Fatonah et al. (2025) that Pancasila education at the elementary school level still tends to rely on traditional approaches, thereby failing to optimally encourage active student participation.

Furthermore, the gap between students' conceptual understanding of the importance of responsibility and their low level of actual practice (teachers assessed that only 46% of students demonstrated responsible behavior) reveals a fundamental challenge in the internalization of character values. This aligns with Lickona's (1992) perspective that character education necessitates not only the transmission of knowledge but also pedagogical strategies that facilitate students' experiences, internalization, and application of values in everyday life. Thus, the results of this study enrich our understanding that the internalization of the value of responsibility requires a more interactive and applicable approach.

In addition, the limitations of learning media, as reported by both students (35%) and teachers (61%), and the low integration of technology (27% among students) underscore the urgent need for learning innovation. This finding aligns with the results of Rokhmani & Suhardi (2021), who identified teachers' limited digital literacy as a primary obstacle to utilizing technology media to support character development. In this context, interactive multimedia is seen as a potential solution. As stated by Cahyani & Dewi (2021), interactive media can bridge abstract concepts with concrete experiences, making it more effective in fostering attitudes and character values in students.

This study also confirms the potential of interactive multimedia as a learning strategy relevant to the characteristics of digital-tive students (Achmad & Utami, 2023; Fitriyadi & Wuryandani, 2021; Hasanah et al., 2021; Rofiah et al., 2024). This is supported by the findings of Fatonah et al. (2025); Syarief Abdullah et al. (2025), which show that digital media development programs based on national values rarely touch on specific aspects, such as responsibility, even though students' need for attractive and interactive media is very high (Putri, 2019; Lazuardy et al., 2025; Naredi et al., 2025; Samosir et al., 2023; Siburian & Gandamana, 2024). Therefore, the contribution of this study lies in emphasizing that strengthening responsibility in Pancasila Education in elementary schools requires not only an appropriate curriculum, but also innovative learning tools that enable students to practice in contextual situations actively (Abdullah et al., 2025; Aprilia et al., 2023; Jayanti et al., 2025; Sulthon et al., 2021).

Practical implications can serve as a reference point for advancing Pancasila Education, particularly by strengthening the character of responsibility among elementary school teachers, schools, media developers, and parents. Teachers need to start utilizing interactive multimedia as an integral part of the Pancasila Education learning process (Aprilia et al., 2023; Rachmadyanti et al., 2024; Sulthon et al., 2021). This not only helps reduce the dominance of lecture methods but also opens up space for active student involvement in exploring the value of responsibility. As emphasized by Cahyani & Dewi (2021), interactive media can connect abstract concepts with real experiences, allowing teachers to use simulations, videos, or educational games to train students to make responsible decisions. Schools need to support the development and utilization of technology-based learning media by providing facilities, infrastructure, and digital literacy training for teachers (Achmad & Utami, 2023; Cynthia & Sihotang, 2023; Rofiah et al., 2024; Sagala et al., 2024). Rokhmani & Suhardi (2021). The study also emphasizes that teachers' limited digital competencies are a significant obstacle to the effective use of technology-based media. With support from school policies, interactive multimedia can be systematically integrated into Pancasila education, making it easier to achieve curriculum objectives.

This study also opens opportunities for media developers to design interactive multimedia that not only conveys cognitive knowledge but also internalizes character values, especially responsibility. In line with the views of Arum et al. (2025), the digital media development program should be more specifically focused on character building grounded in national values. This enables the creation of media that is more relevant to the Indonesian curriculum context while also meeting the needs of digital native students (Achmad & Utami, 2023; Althibyani & Al-Zahrani, 2023; Mungsoongnern et al., 2025).

The implementation of teacher-parent cooperation also shows inconsistency, as reflected in teacher interviews and reinforced by Nugraha & Nurani's (2021) findings, which link low student discipline to inconsistent parenting styles at home and at school. Studies by Abdurahman et al. (2023), Permatasari et al. (2024), and Yalçın & Güleç (2022) also emphasize that the habit of responsibility must be instilled consistently through support from the surrounding environment. Thus, in line with the views of Sarkadi et al. (2022) and Sartono et al. (2022), character education requires a holistic, meaningful approach that goes beyond mere mechanical knowledge transfer. This is reinforced by the questionnaire results, which show that only 40% of students receive parental support in instilling responsibility, indicating the need for family involvement in the character education process. Flexibly designed interactive multimedia can be used at home, so that parents can play an active role in

accompanying their children in practicing the value of responsibility in their daily lives (Al-Ishmah et al., 2023; Alyusfitri et al., 2024; Pradana, 2021; Saputra & Salim, 2021; Septiani et al., 2020).

These practical implications highlight that this study not only broadens academic understanding of the challenges of teaching Pancasila Education but also makes a real contribution to educational practice in elementary schools. The integration of interactive multimedia has the potential to be a transformative strategy for bridging the gap between curriculum objectives and classroom teaching practices, while strengthening students' internalization of values of responsibility.

### **Conclusion**

This study confirms a clear gap between the objectives of the Pancasila Education curriculum, which emphasize strengthening responsibility, and classroom learning practices that are still dominated by lectures, lack innovation, and have low technology integration. The results of questionnaires, observations, and interviews indicate that both students and teachers are highly aware of the importance of using technology-based learning media; however, their availability and utilization remain very limited. This condition has important implications: interactive multimedia can be a strategic solution that bridges this gap by providing more active, contextual, and meaningful learning. The impact of this research not only enriches the literature on character education with a specific focus on the value of responsibility, but also provides practical contributions for teachers, schools, and parents in designing and utilizing innovative learning media, while opening opportunities for educational policies that are more responsive to the needs of digital native students.

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