



Development of interactive multimedia based on cultural literacy for Pancasila education in elementary schools

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Article Info

Article history:

Received August 22, 2025

Revised October 22, 2025

Accepted October 31, 2025

Available online November 19, 2025

Keywords: Cultural literacy, Interactive multimedia, Learning media, Multimedia development

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Abstract. One of the main objectives of the Merdeka Curriculum is to cultivate students who practice Pancasila values, including an appreciation of diverse cultures. Currently, teachers rely mostly on textbooks and YouTube videos, highlighting the urgent need for contextual, culturally literate interactive media. This study aimed to develop such media for Grade 3 elementary students using the ADDIE model. In the Analyze stage, a needs analysis was conducted with 20 teachers and 20 students from three elementary schools through interviews and a review of materials. The prototype was validated by media, content, and language experts, followed by one-on-one testing with three students and a broader implementation with 46 students using feasibility questionnaires. This evaluation of the multimedia yielded positive results, with respondents scoring it 85.65%, 81.85%, and 82.17% for presentation, content, and navigation, respectively, all in the excellent category. This shows that the designed interactive multimedia is suitable to be used for both classroom and

independent learning. This study addresses a gap in the previous research, which primarily focused on interactive multimedia for STEM classes. Thus, we recommend a wider adoption of such contextual, interactive multimedia for a diverse range of subjects, as well as further research on its impact on students' cultural literacy.

Introduction

Technological advances in the 21st century have made it easy for Indonesians to access information about various foreign cultures. This increased exposure to a wide range of cultural values through the media is part of the phenomenon of globalization. While technological advances have made it easier to nurture a more tolerant culture through greater exposure to diverse cultural values, they may also create a unified, dominant culture at the expense of local cultures. Young students may find foreign cultures that dominate the media more trendy and relevant, decreasing their interest in their own local culture; this situation would gradually threaten the preservation and development of local traditions in Indonesia (Ernawam, 2017). Recognizing these challenges, the Indonesian government has envisioned the schools as a strategic domain to cultivate cultural literacy (broadly defined here as students' knowledge of, identification with, and ability to interpret and practice local cultural values and traditions), as seen in the development of the Merdeka Curriculum and the Profil Pelajar Pancasila (P5) initiative.

The Merdeka Curriculum has been implemented in all levels of education, starting from early childhood, up to high school. The curriculum gives educators the flexibility to focus on materials that are essential for the development of lifelong learners and students who internalize the values of Pancasila, allowing teachers the flexibility to respond to students' specific and contextual needs ([Peraturan Menteri Pendidikan, Kebudayaan, Riset Dan Teknologi Republik Indonesia Nomor 12 Tahun 2024 Tentang Kurikulum Pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, Dan Jenjang Pendidikan Menengah, 2024](#)). An integral aspect of the Merdeka Curriculum is the P5 values that must be internalized for students ([Ressi Kartika Dewi et al., 2023](#)). In this study, the researchers are specifically focusing on one distinct characteristic of P5 values, namely, students' commitment to diversity and inclusion. Concretely, students are expected on the one hand to preserve and develop their local customs, while on the other hand, also keeping an open mind and interacting responsibly with foreign customs to build a culture of inclusive appreciation. To achieve these ideal goals, contextual and engaging learning materials are needed to support student learning, especially in the early years of primary school.

The implementation of Pancasila learning in schools is supported by books published by the Ministry of Education, Culture, Research, and Technology in 2023. Although the book includes various forms of learning, such as reading passages, activities, and YouTube videos ([Ressi Kartika Dewi et al., 2023](#)), the cultural discussions are mostly too general and lack context. This is a roadblock to properly teaching the Pancasila values, as this would require contextualization based on local conditions and Human Resources ([Hidayat & Putro, 2024](#)). Interviews, both formal and informal, with 20 students from the Grade 3 primary school level for this project, also found that most of them are unaware of their own unique ethnic cultures and customs. Moreover, current practice in schools shows that cultural literacy programs are conducted only in conjunction with certain holidays or celebrations, such as World Food Day or Kartini Day. This shows low cultural literacy among students, despite some cultural awareness.

In addition, based on interviews with 20 homeroom teachers at the Grade 3 primary school level, the team found that teachers are not yet integrating interactive multimedia, relying instead on PowerPoint presentations and YouTube videos to support student learning. They follow the government textbooks and have not integrated Indonesia's cultural diversity in teaching. Furthermore, schools currently do not have any specific cultural literacy programs that can increase students' ability to understand, respect, and build meaning from differences in their surroundings ([Anawati, 2021](#)). As such, current practices show a lack of culturally contextualized multimedia built explicitly for Pancasila in Grade 3 classrooms aligned to local student cultures. This is concerning because the ideal goal of cultural literacy beyond awareness can be greatly supported by integrating and balancing various materials connected to Indonesia's diverse traditions in the learning materials, including for the Pancasila classes. This is aligned with findings from previous studies. [Agustian \(2021\)](#), for example, shows that teachers need a learning medium with local and contextual cultural content. Similarly, [Pangestika & Yansaputra \(2021\)](#) recommended that local culture should be included in the learning process, so that students can internalize and practice the values of Pancasila better, specifically the one related to the revitalization and development of local traditions.

Educators must connect the Pancasila values to the knowledge and skills that they teach in class ([Widana et al., 2023](#)). Therefore, they need to choose the right sources, learning materials, strategies, and methods, including the right form of media and technology, so that students will learn about the Pancasila with increased interest. At the same time, the right form of media and technology in learning can help students develop their soft skills in areas such as critical thinking, observation, analytical thinking, and problem solving ([Pribadi, 2017](#)). One form of learning media

that is often used today is interactive multimedia. Studies such as [Apriyani et al. \(2022\)](#); [Ngananti et al. \(2023\)](#); [Nugraha et al. \(2019\)](#), among others, have shown that interactive multimedia can increase students' learning outcomes. Interactive multimedia is especially effective because it blends text, audiovisual media, and assessment in ways that make the materials much more engaging for students in the early grades ([Citrawan et al., 2024](#)).

Considering these facts, the researchers find that the development of interactive media for Pancasila lessons is needed to enhance students' cultural literacy. This research offers something new in developing multimedia that is grounded in cultural literacy, whereas many previous studies were often developed for science and mathematics ([Apriyani et al., 2022](#); [Ngananti et al., 2023](#); [Nugraha et al., 2019](#)). We designed and developed culturally literate interactive multimedia for the Grade 3 Pancasila class, contextualized to the cultures of Banten, Batak Toba, and Central Java, which represent the students in the school we surveyed for this study. Our new contributions include: (i) Pancasila (not STEM) focus, (ii) locality grounded in students' actual cultural backgrounds, and (iii) ready-to-use, teacher-oriented design.

The main objective of this research is to develop and evaluate a culturally sensitive interactive media for Grade 3 Pancasila students. Specifically, the following research question guided this study: How can interactive multimedia that is based on cultural literacy be developed to support Pancasila education at the Grade 3 elementary school level? The researchers' working hypothesis is that the developed interactive multimedia would obtain an excellent quality rating ($\geq 81\%$) across presentation, content, and navigation criteria from experts and Grade 3 student users. increase students' cultural literacy and interest in their local cultures.

Method

Design & Model

This study employs the Research and Development (R&D) approach, developed by the industry. In the education field, R&D research is typically conducted to develop learning programs that are engaging and motivating for students ([Pribadi, 2023](#)). Specifically, this study uses the ADDIE model that consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model, developed by Florida State University, was selected for this study for its systematic, simple, and flexible structure. The research team found that these characteristics of the model are best suited to creating instructional media that are interesting, learner-centered, innovative, authentic, and inspiring ([Batubara, 2020](#); [Branch, 2009](#); [Pribadi, 2014](#)). Naturally arising from the ADDIE model is the qualitative-informed quantitative development approach, in which qualitative interviews are used in the early analysis, development, and implementation stages, whereas a quantitative questionnaire is used in the final evaluation stage.

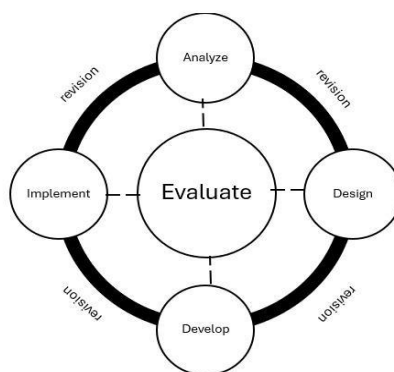


Image 1. ADDIE development model adapted from ([Branch, 2009](#))

Setting & Participants

The study was conducted involving Grade 3 students and teachers from three elementary schools in the Tangerang area: SD SSA1, SD SSF, and SD SSM. In the needs analysis stage, a total of 20 teachers and 20 students from these schools were involved. Subsequently, 3 students were involved in the one-on-one testing during the implementation stage, and finally 46 students were surveyed in the final evaluation stage to gauge the design, content, and navigation aspects of the interactive multimedia.

Sampling

Participants for the research were selected using purposive sampling based on several criteria: (i) their involvement in Pancasila instruction; and (ii) readiness of their schools to implement the interactive multimedia product.

Procedures

Data collection in the earliest analysis stage was done through in-depth interviews with the teachers and students to understand their needs for culturally relevant learning media. At this stage, the team also conducted an analysis of the school curriculums, using the Outcome-Based-Education (OBE) approach of starting at the top with learning outcomes, before moving down to align the learning objectives, and activities as the basis for the interactive multimedia development.

In the design stage, the team planned the concept and materials that would shape the product, including making flowcharts, storyboards, and validation and evaluation instruments. The multimedia was designed to focus on three local cultures that are integrated with Pancasila values: Banten, Batak Toba, and Central Java.

In the development stage, the team put together the design plans and finalized the prototype. This was done by combining figures, narrative, animation, and video in Canva, which was then turned into a PowerPoint presentation. To make the PowerPoint more interesting for young students, we used music from www.bensound.com as background music. Interactive navigation was then built into the multimedia through PowerPoint Link and Action features; quizzes were also made using iSpring Suite 11, which integrates seamlessly with PowerPoint. The finished prototype was then validated by media, material, and language experts, who gave constructive feedback; this was used by the team to revise the multimedia prototype.

The implementation stage was conducted on April 17, 2023, at SD SSA1, Class IIIA, through one-on-one testing. This testing involved 3 students at different levels: one average, one below average and one above average. Each student was asked to interact with the media prototype designed by the research team; the team then recorded the quiz scores that they completed through the multimedia. Afterward, each student was interviewed to check on their understanding of the materials after learning through the interactive multimedia. Feedback gained in this stage guided further improvement of the prototype.

In the last evaluation stage, the revised interactive multimedia was then tested with 46 Grade 3 students at the participating schools in Tangerang. After the testing, the team collected data through questionnaires evaluating three different aspects of the prototype: design, material presentation, and navigation. The questionnaires were analyzed using descriptive statistics with a 5-point Likert scale, as suggested by Arikunto (Ernawati, 2017).

Instruments

In the ADDIE R&D approach, both qualitative and quantitative methods were used. In the earlier stages where the team was gathering needs and feedback on the design, qualitative methods using

in-depth interviews were used extensively. In the analysis stage, the researchers prepared instruments consisting of interview questions on current practices in cultural and contextual Pancasila learning, as well as the learning media used in class. Similarly, in the development stage, interviews were conducted with media-, material-, and language experts to get feedback on the prototype design. The instrument used was interview questions tailored to the specific expertise of the different experts. Next, in the implementation stage, more in-depth interviews were conducted with the 3 student participants of the one-on-one testing. Interview questions were geared towards the student experience and understanding of the material. In the last evaluation stage, a quantitative approach was utilized. The instrument used was a questionnaire on design, content, and navigation aspects of the interactive multimedia prototype.

Data Analysis

Interview recordings from the analysis, development, and implementation stages were transcribed carefully. Thematic analysis was then conducted on the interview transcripts to identify recurring themes and provide feedback on what to revise at the respective stages of the study. To analyze quantitative data from the questionnaire, the scores for each point across different aspects were collected, and the average score for each point was then calculated using the following formula: Average score = (sum of scores from respondents / sum of maximum scores) x 100%.

The benchmark used to determine the overall quality of the designed interactive multimedia follows Arikunto, as cited in [Ernawati \(2017\)](#), and summarized in the table below.

Table 1. Quality Benchmarking

Score	Percentage	Quality
1	< 21%	Failing
2	21% - 40%	Unsatisfactory
3	42% - 60%	Average
4	61% - 80%	Good
5	81% - 100%	Excellent

Product Specification

The end product of this study was an interactive multimedia that is culturally and contextually relevant for Grade 3 students in the Tangerang area. Pancasila teachers can readily use the multimedia as it runs as a PowerPoint/iSpring package on classroom PCs with a projector; average session time $\approx$ X minutes; Indonesian interface; fonts $\geq$ 18 pt.

Ethics

The study received approval from the participating schools and the teachers involved; student involvement was also done after obtaining parental consent. Data from interviews and the questionnaire were anonymized, so participants' information is kept safe. Audio and visual materials in the prototype are royalty-free or originals created by the team.

Results and Discussion

Analysis stage

Needs Analysis, interviews with the 20 teacher respondents of the study show that most homeroom teachers are not familiar with the concept of cultural literacy, especially those who are older. Those who are already familiar with cultural literacy, though, think that it should definitely be taught to students because they live in Indonesia, a country with a rich and diverse cultural identity. They observed that even students in the same class may come from different ethnicities. These teachers hope that cultural literacy can help students understand the country's diverse culture. In the learning

process, cultural literacy is not explicitly taught; instead, it is integrated into the class materials. Teachers also reported using PowerPoint presentations, online figures, and YouTube videos in their lessons.

However, very few homeroom teachers, mostly only those who are still young, are familiar with and use interactive multimedia. All teachers agree, though, that interactive multimedia grounded in cultural literacy should be integrated into the learning process, because they recognize the usefulness of such media in increasing students' interest and passion for learning, especially since most of their students are digital natives who are very familiar with technology. However, previous studies report such interactive multimedia developments primarily for science classes that cover topics such as weather and changes in states of matter (Dindariesta & Kristiantari, 2022; Ngananti et al., 2023; Purnadewi & Widana, 2023). Therefore, the researchers see a gap in the development of interactive media that specifically addresses cultural literacy.

Interviews with students reveal that all of them can name their own ethnicity. However, they are not able to explain the unique customs and traditions of their ethnicities. Most of them were also able to name their classmates' ethnicities, but were unable to explain the unique customs and traditions of those ethnicities. Additionally, while students may be able to explain Indonesian culture in general, they show a deep understanding of only some aspects of Indonesian traditions. This clearly demonstrates that students are generally already equipped with some cultural awareness, recognizing superficial cultural practices, but do not currently have the literacy to interpret and engage with different cultures. However, they expressed that they are happy to learn and be exposed to more Indonesian culture, showing a positive sign that they would be receptive to culturally literacy-based education.

Curriculum Analysis: Curriculum analysis was done through content analysis of the teachers' and students' versions of the textbook used for the Grade 3 elementary school level in the Pancasila class. In chapter 3 of the book, one of the learning objectives is for students to be able to identify, contrast, and respect their family, friends, and self-identity, based on culture, ethnicity, and languages used at home, in school, and in the community. This is evidence that culture is already part of the learning in class. In the textbook, there is general information on areas like Lombok, East Kalimantan, and some local customs from ethnicities such as Batak, Asmat, and Betawi. However, the teachers interviewed in this study find that Banten, North Sumatra, and Central Java cultures are the ones that are most suitable to be taught in their classes, because they represent the ethnicities of the students in their classes. As such, the researchers noted that current materials used to teach cultural literacy are still superficial and not directly relevant to the cultures of students in the Tangerang school area.

Design stage

Results from the needs and curriculum analysis were used to select basic competencies in Pancasila education at the Grade 3 elementary level that can be integrated with cultural content. The following are the basic competencies that the team chose as the most aligned with cultural competency: 1) Students can explain Banten, North Sumatra, and Central Java cultures, and 2) Students can accept and respect cultural diversity around them.

The choice to include the Banten culture takes into account its proximity to the location of the schools in Tangerang. On the other hand, the choice of North Sumatra (Batak Toba) and Central Java cultures is based on the ethnicities of the students in the schools that were targets of the needs analysis. These criteria ensure that the media developed through this study is contextualized for the local environment and identities of the target students. For each chosen culture, the team decided to develop media that teaches students about the cultures and their unique traditions, including

traditional attire, traditional architecture, food, songs, dances, and rituals. The flow of information was carefully mapped by using the flowchart depicted in image 2 below.

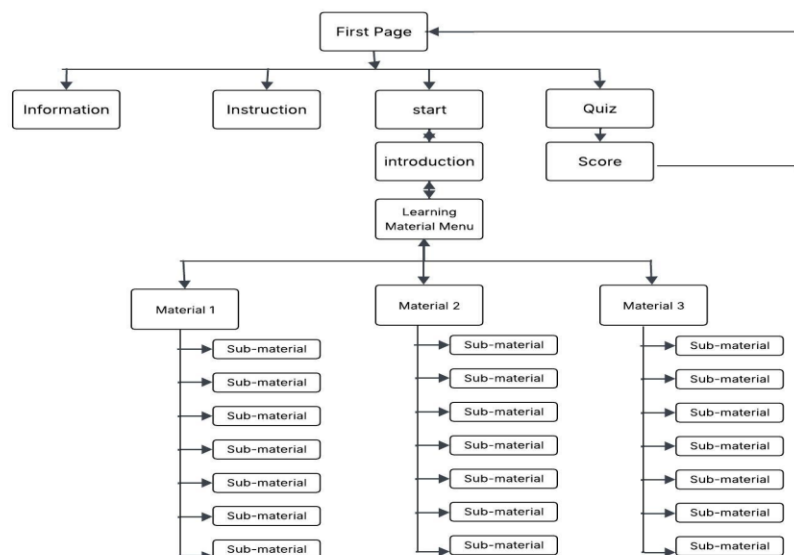


Image 2. Flowchart for the interactive multimedia planning

Based on the flowchart, the research team began sketching and creating a storyboard that includes the design for each page of the interactive multimedia. The storyboard has details on the texts, illustration or animation placement, and the navigation button for each page. Below are several examples of the storyboard pages created. Specifically, image 3 shows the starting page of the interactive multimedia, which includes five navigation buttons: an information button, a guidelines button, a start button, a quiz button, and an exit button.



Image 3. Storyboard for the starting page

Image 4 below shows the learning outcome page of the interactive multimedia. This page has the learning outcomes that are to be achieved through the interactive multimedia engagement.

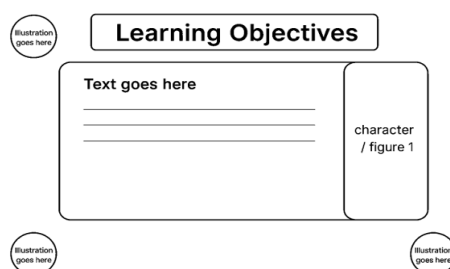


Image 4. Storyboard for the learning outcomes

Moreover, image 5 below shows the references page with links to resources, including illustrations, animations, materials, and other information presented in the interactive multimedia. Here, there are 3 interactive buttons that students can use to get to the starting page, the previous page or the next page.

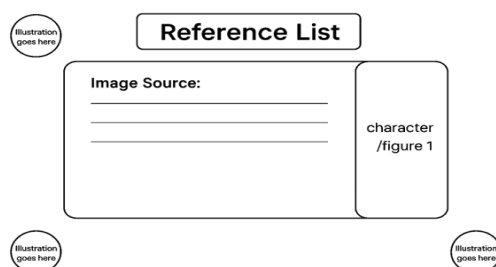


Image 5. Storyboard for the references

Next, there are the user guidelines for the interactive multimedia. This page explains the functions of all the buttons included in the multimedia. The exact layout can be seen in image 6 below.

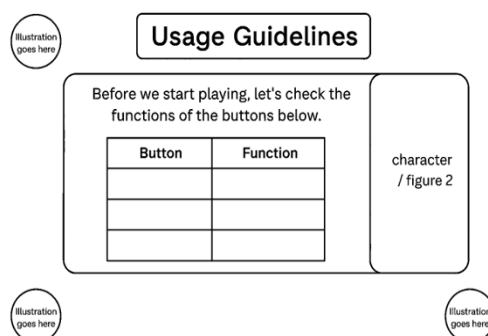


Image 6. Storyboard for the user guidelines

Overall, there are 12 storyboard pages; and the last page is a quiz that can be used to measure the students' understanding of the materials.

Development Stage

Based on the storyboards made in the design stage, the research team developed the final product using various softwares such as Canva, Microsoft PowerPoint and iSpring Suite 11. Below are examples of some pages from the interactive media.

The storyboard for the starting page as conceptualized in image 3 above was transformed with an attractive background picture and button design as shown in image 7 below.



Image 7. Starting page of the interactive multimedia

Similarly, storyboards for the learning outcomes, references and user guidelines were reconstructed using similar colorful backgrounds.

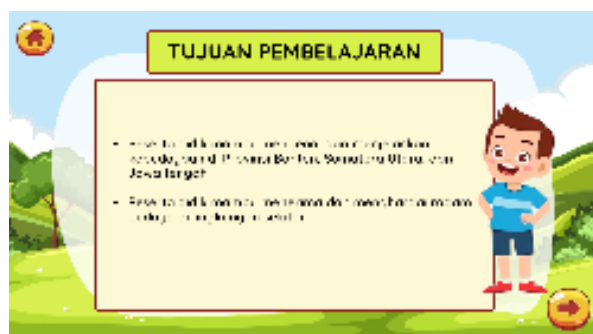


Image 8. Learning outcomes page of the interactive multimedia

To make the media more personable, the team also added child characters to the illustrations, as seen in image 8 above and image 9 below.



Image 9. References page of the interactive multimedia

To ensure equal gender representation, the team developed both male characters (image 8 and 9), as well as female characters (image 10).

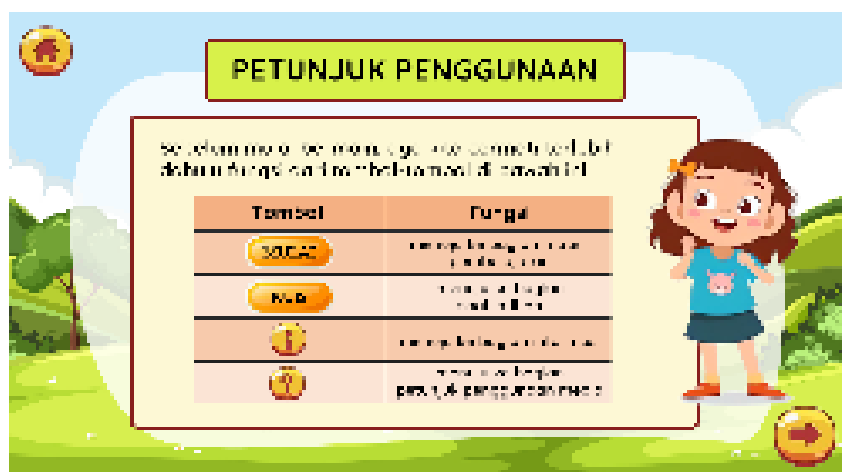


Image 10. User guidelines page of the interactive multimedia

Characters used in the media represent children from Banten, North Sumatra and Central Java, aligned with the ages and ethnicities of the children in the target school, ensuring proper contextualization not only in content, but also in visuals.



Image 11. Main menu page of the interactive multimedia

To provide clearer and more vivid explanations that are age appropriate, many pictures and illustrations were used to depict different cultural items such as food, dances and traditional attire.



Image 12. Content page of the interactive multimedia with pictures

However, to make sure that students are also equipped with in-depth literacy on the different cultural items, pictures are accompanied with appropriate narratives that are informative.



Image 13. Content page of the interactive multimedia with text

Of course, a learning tool would not be complete without a way to measure the learning outcome. Therefore, the team designed an equally interactive quiz to be done upon completion of the learning process.



Image 14. Quiz page of the interactive multimedia

The first draft of the interactive multimedia was validated by 3 experts: a media expert, a content expert and a language expert.

Media expert validation

The media expert gave a generally positive review of the first multimedia draft. Specifically, the following items were rated well and suitable for the target students: 1) the overall design, 2) picture and video quality, 3) picture, video and color choices, 4) font type and size, 5) clarity of instruction, 6) ease of navigation.

Some feedback received includes slightly unproportional pictures in a few pages, as well as how the text seems to overwhelm the illustrations on several pages. The expert also gave some stylistic feedback, suggesting that the title on the front page should not use the shadow effect for clarity. Additionally, several recommendations were given related to the quiz; first, it should be made more interesting with some background sounds such as clapping sounds when students get the right answer. Second, it should also take into account young students' sensibilities and eliminate negative comments such as *Maaf kamu belum berhasil* 'Sorry you did not get the right answer,' as this would discourage young children.

Content expert validation

The content expert also gave a generally positive review of the early multimedia draft. They indicated that the content is already aligned with the learning outcomes, supported by a systematic organization of content presentation that makes the subject interesting and varied. Moreover, the content was judged suitable for the target students; its accuracy and credibility were further validated based on the references. On the other hand, feedback for improvement are as follows: 1) reduce repetition of sentences explaining the Banten traditional attire, 2) pictures should be made bigger on several pages, 3) gondang instrument should be added to accompany explanation of the Tortor dance, 4) replacement of the Ngariung tradition in Banten with debus that is more representative, 5) containing the quiz questions to one question and one correct answer for every number. Accordingly, the team made the suggested revisions.

Language expert validation

The language expert noted that language use in the multimedia was already good and aligned with the PUEBI. Sentences used in the explanations are well-formed, and the information included are complete. The language used is also simple, suitable for young students and there are sufficient

guidelines on how to use the multimedia. However, the language expert also noted that the team needs to pay attention to capitalization, especially for names related to ethnicities, songs, and traditional dances. On the other hand, multiple choice answers have to be decapitalized at the beginning of the sentence. In addition, the team had to review the use of punctuations, especially in the learning outcomes portion.

Implementation Stage

After making all the necessary revisions based on the expert validations, the research team was ready to conduct a limited evaluation of the multimedia prototype with 3 selected students. This was done in the form of one-on-one tryout where students were invited to use the interactive multimedia, after which they were interviewed on their experience using the prototype. The students were each given 15 - 25 minutes to explore the interactive multimedia.

Afterward, the team was ready for a larger implementation involving students from 2 different classes, both at the Grade 3 elementary level. The testing was conducted by asking students to access the interactive multimedia link, so that they can explore it freely. After that, they were asked to fill out a google form with questions related to the visuals, content and navigation of the multimedia prototype.

Evaluation Stage

The limited evaluation revealed that all participants had a positive experience with the interactive multimedia prototype. They generally agree with the media expert that colors used in the prototype are interesting, and that pictures and animations are clear for viewing. In regards to readability, the student testers reported that texts are generally clear with language that is easily understood, as well as user guidelines that are clear and easy to follow. Other features like background sounds and buttons are also all functional and working properly. Additionally, students shared that the new media format increased their interest in learning and makes it easier for them to learn, as well as understand diverse Indonesian cultures. Accordingly, they did not give any feedback for improvement. When tested on their understanding of the materials, students were able to recount the cultural items they have learned using the interactive multimedia, including food such as *sate bandeng* from Banten, *mie gomak* from North Sumatra, and *soto kudu* or *mendoan* from Java, as well as traditional attire like *kain ulos* from the Batak culture. The researchers observed that students were enthusiastic while exploring the interactive multimedia. In fact, the students were very curious and tried accessing all the buttons available in the interactive multimedia; the same interest and curiosity levels were maintained while they read the content and watched the videos in the program.

After receiving positive responses from the limited testing stage, the team was ready to scale up the testing to include 46 students from 2 different Grade 3 elementary school classes. Responses were collected using Google Form. Table 2 below summarizes the responses received on the presentation aspects. The total score given by students on all presentation aspects is 1379 out of the 1610 total possible. With an overall average of 85.65%, it can be concluded that the presentation aspects of the interactive multimedia are of excellent quality.

Table 2. Student tester scores for the presentation aspects

Presentation Aspects		
Indicator	Sum of score received	Sum of maximum score possible
Colors used in the multimedia are interesting for the students	202	230

Pictures and animations in the multimedia are clear for viewing	200	230
Pictures and animations in the multimedia are interesting	197	230
Texts are clearly readable	188	230
Videos in the multimedia can be watched properly	196	230
Sounds in the multimedia can be played and heard clearly	195	230
Use of multimedia increases students' interest in learning	201	230
Total	1379	1610
Percentage	85.65 %	100%
Quality	Excellent	

Aside from the presentation aspects, the team also asked student testers to rate the interactive multimedia on its content. Table 3 below summarizes the scores given by students on different content aspects of the interactive multimedia. The total score given by students on all presentation aspects is 753 out of the 920 total possible. Although the overall average score is slightly lower than the presentation aspects at 81.85%, it can be concluded that the content aspects of the interactive multimedia are also excellent.

Table 3. Student tester scores for the content aspects

Indicator	Content Aspects	
	Sum of score received	Sum of the maximum score possible
Language can be easily understood by students	186	230
Content can be easily understood by students	188	230
User guidelines can be easily followed by students	184	230
The interactive media supports ease of learning related to Indonesia's cultural diversity	195	230
Total	753	920
Percentage	81.85 %	100%
Quality	Excellent	

Next, the team asked student testers to rate the interactive multimedia on its navigation aspects. Table 4 below summarizes the scores given by students on different navigation aspects of the interactive multimedia. The total score given by students on all presentation aspects is 378 out of the 460 total possible. The overall average score is 81.85%, in between the presentation and content aspects. As such, it can be concluded that the navigation aspects of the interactive multimedia are excellent.

Table 4. Student tester scores for the navigation aspects

Navigation Aspects		
Indicator	Sum of score received	Sum of the maximum score possible
Navigation buttons can be utilized with ease by students	187	230

Navigation buttons in the interactive multimedia are functional	191	230
Total	378	460
Percentage	82.17 %	100%
Quality	Excellent	

Tables 2-4 above demonstrate that the interactive multimedia was deemed excellent on all aspects by the testers. The average score across the 3 different aspects is 83.22%. This shows that the interactive multimedia developed by this research team was ready to be used and made available to a wide range of users in different learning settings.

It can therefore be concluded that the team was successful in making an interactive multimedia based on the needs of the target teachers and students; one of the main reasons for this success was the thorough needs analysis done at the start of the project. Previous studies, such as Pratiwi et al. (2025), showed that participant involvement in the needs analysis led to higher interest and positive user responses. Similarly, [Shakeel et al. \(2023\)](#) emphasized the importance of the early analysis stage in defining needs and possible solutions. [Zulaiha et al. \(2025\)](#) discussed how needs-findings, such as learner styles, can help inform the product media specifications and boost support, as well as feasibility, in the later stages of the design development.

Besides the sound needs analysis, the fact that the team developed an interactive multimedia contributed greatly to the excellent grade given to the prototype. The team took into account the teachers' observations that students are much more invested when learning using technology and gadgets that they can engage actively with. Other similar studies have shown that interactive learning in the form of gamification ([Sarira et al., 2025](#)), AI-based multimedia ([Setiadi & Andriani, 2024](#)), as well as digital storybooks ([Dharma et al., 2025](#)), showed that interactive gamification use at the elementary school level can significantly boost understanding, motivation, and participation.

While studies have shown that interactive learning models utilizing computer or Android devices are much more familiar and engaging for young students, many interactive media that support such learning models mainly focus on teaching mathematics and the natural sciences ([Dindariesta & Kristiantari, 2022](#); [Ngananti et al., 2023](#); [Anto et al., 2024](#)). [Aryfien et al. \(2025\)](#), in their recent systematic literature review of interactive learning media development at the elementary school level, explicitly stated that most research in this topic focuses on STEM subjects. The interactive multimedia prototype we developed fills this gap by integrating cultural literacy in Pancasila education. The inclusion of specifically Banten, North Sumatra, and Central Java cultures makes the media more contextually relevant to the target students and therefore aligned with the Merdeka Curriculum and the P5 guidance to strengthen diversity competencies.

[Widya Padmini et al. \(2022\)](#) and [Pribadi \(2014\)](#) claim that in the 21st Century, cultural literacy is crucial for young students due to widespread globalization, which exposes them to a multitude of changes and developments across all aspects of life, including culture. On the other hand, Indonesia also has a large variety of cultures with its different ethnicities, religions, art, traditions, and local wisdom. Therefore, students must be nurtured to be appreciative and understanding of foreign cultures, without leaving or forgetting local ones. The interactive multimedia developed in this study is one solution to this conundrum. Through the use of this interactive multimedia, students are encouraged to understand and be curious about different local cultures. This can potentially help them internalize Indonesian cultures and values as part of their national identity that can guard against local culture loss in this era of globalization. Using such materials grounded in cultural literacy would also contribute greatly to Pancasila education for young students.

Practically, Grade 3 teachers can use the interactive multimedia as a supplement to the government Pancasila textbooks to provide more contextual examples and interactive learning. Teachers can also learn from the R&D process, empowering them to develop their own interactive multimedia independently. At the school level, the interactive multimedia can be integrated into various P5-related projects that target diversity and inclusion outcomes. At the national policy level, this study contributes to the implementation and operationalization of the Merdeka Curriculum and its P5 outcomes.

On the other hand, several limitations of the current study. We have focused solely here on feasibility, with little consideration of learning outcomes. We did not include a control group or conduct pre- or post-tests that would have been necessary if the effectiveness of the multimedia were to be prioritized. Additionally, we implemented a descriptive statistics model with no validity or reliability calculations. Future development of this project would need to include a larger sample, more statistical analysis, and an experimental design to ensure that the product meets concrete learning outcomes.

Conclusion

This research project produced an interactive media-based on cultural literacy titled “Let's get to know the Cultures of Banten, North Sumatra, and Central Java,” that was adapted for use in Pancasila Education for the lower elementary level. The multimedia was developed using the ADDIE development model and can be used to increase students' awareness of the cultural diversity around them. Such educational media can increase students' motivation to get to know and appreciate Indonesia's cultural diversity. Through this multimedia, students can understand the local culture of Banten where they live, as well as the Batak and Javanese cultures of their classmates' families. Previously, these kinds of learning tools have been developed chiefly for mathematics and the natural sciences, whereas this project was focused on cultural literacy as part of Pancasila education. The research team hopes that the interactive multimedia developed through this project can serve as a learning medium in the classroom and as part of a more comprehensive cultural literacy program in schools. This may also serve as a model for other teachers to develop similar interactive media for their own classes, and as a starting point in further studies on cultural literacy.

Bibliography

- Agustian, M. (2021). *Analisis dan kebutuhan pembelajaran tematik Nusantara Sekolah Dasar pada masa pandemi COVID-19* (Analysis and needs of thematic learning of Nusantara for elementary schools during the COVID-19 pandemic). PT Kreasi Skrip Dijital.
- Anawati, R. (2021). *Pengembangan media pop-up book berbasis literasi budaya dalam pembelajaran tematik kelas II SD/MI* (Development of a culture-based pop-up book media for thematic learning in Grade II elementary school). *SKRIPSI*, 2(4), 1147–1152.
- Anto, Y., Zurweni, Z., & Harjono, H. S. (2024). Development of interactive multimedia based on local wisdom of jambi oriented by students' creative thinking ability in high school physics subjects. *Indonesian Journal of Educational Development (IJED)*, 5(1), 137-149. <https://doi.org/10.59672/ijed.v5i1.3734>
- Apriyani, N., Magdalena, I., & Azhar, A. P. (2022). Pengembangan media pembelajaran multimedia interaktif pada muatan ipa sekolah dasar kelas iii mi kafilatul mu'minin (Development of interactive multimedia learning media for science content in Grade III elementary school). *Jurnal Pendidikan Dan Konseling*, 4, 3330–3335.

- Aryfien, W. N., Atmojo, I. R. W., & Matsuri, M. (2025). Interactive learning media for better learning outcomes in elementary school: A systematic literature review. *Mimbar Sekolah Dasar*, 12(1), 132-147.
- Batubara, H. H. (2020). Media pembelajaran efektif. (Effective learning media). *Semarang: Fatawa* (Issue October).
- Branch, R. (2009). Instructional design: The ADDIE approach. In *Instructional Design: The ADDIE Approach*. <https://doi.org/10.1007/978-0-387-09506-6>
- Citrawan, I. W., Widana, I. W., Sumandya, I. W., Widana, I. N. S., Mukminin, A., Arief, H., Razak, R. A., Hadiana, D., & Meter, W. (2024). Special education teachers' ability in literacy and numeracy assessments based on local wisdom. *Jurnal Ilmiah Ilmu Terapan Universitas Jambi*, 8(1), 145-157. <https://doi.org/10.22437/jiutuj.v8i1.32608>
- Dharma, I. M. A., Dantes, N., Lasmawan, I. W., & Suastika, I. N. (2025). Effectiveness of digital storybooks based on balinese culture for enhancing cultural-civic literacy and pancasila education outcomes. *Journal of Education and E-Learning Research*, 12(2), 165-178.
- Dindariesta, N. K. W., & Kristiantari, M. G. R. (2022). Pengembangan multimedia interaktif untuk siswa kelas iii pada pembelajaran tematik tema benda di sekitarku subtema wujud benda (Development of interactive multimedia for Grade III students in thematic learning on "Objects Around Me," subtheme: Object Shapes). *Jurnal Pendidikan Dan Konseling*, 4, 431–437.
- Ernawam, D. (2017). Pengaruh globalisasi terhadap eksistensi kebudayaan daerah di indonesia (The influence of globalization on the existence of regional cultures in Indonesia). *Jurnal Kajian Lemhannas RI*, 32(1), 1–54.
- Ernawati, I. (2017). Uji kelayakan media pembelajaran interaktif pada mata pelajaran administrasi server (Feasibility test of interactive learning media in server administration subject). *Elinvo (Electronics, Informatics, and Vocational Education)*, 2(2), 204–210.
- Hidayat, W., & Putro, K. Z. (2024). Implementasi kurikulum merdeka dalam pendidikan pancasila di sekolah dasar: Profil pelajar sebagai aset bangsa (Implementation of the Merdeka Curriculum in Pancasila Education at Elementary Schools: Student Profile as a National Asset). *Journal of Nusantara Education*, 3(2), 79–90.
- Ngananti, A. C. P., Basuki, I. A., & Rahayuningtyas, W. (2023). Pengembangan multimedia interaktif materi cuaca untuk kelas 3 sekolah dasar (Development of interactive multimedia for weather material for Grade 3 elementary school). *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 11(2), 166–177.
- Ni Made Widya Padmini, I Wayan Widiana, & Ni Wayan Rati. (2022). Mini web linktree berbasis kearifan lokal bali untuk meningkatkan literasi budaya siswa (Bali local wisdom-based Mini Web Linktree to enhance students' cultural literacy). *Jurnal Pendidikan Multikultural Indonesia*, 5(1), 39–49.
- Nugraha, G. N. S., Teguh, I. M., & Sudarma, I. K. (2019). Pengembangan multimedia interaktif matematika berorientasi kearifan lokal kelas 3 sekolah dasar negeri 1 Paket Agung (Development of local wisdom-oriented interactive mathematics multimedia for Grade 3 at SD Negeri 1 Paket Agung). *Jurnal Edutech Undiksha*, 7(1)
- Pribadi, B. A. (2014). *Desain dan pengembangan program pelatihan berbasis kompetensi (Design and development of competency-based training programs)*. Kencana.
- Pribadi, B. A. (2023). *Penelitian dan pengembangan program pembelajaran (Research and development of learning programs)*. Erlangga.
- Pangestika, R. R., & Yansaputra, G. (2021). Pengembangan multimedia interaktif terintegrasi budaya lokal Purworejo pada subtema keberagaman budaya bangsaku (Development of local culture-integrated interactive multimedia in Purworejo for the subtheme of cultural diversity of my nation). *Jurnal Cakrawala Pendas*, 7(1), 99–109.
- Peraturan Menteri pendidikan, kebudayaan, riset dan teknologi republik indonesia nomor 12 tahun 2024 tentang kurikulum pada pendidikan anak usia dini, jenjang pendidikan dasar, dan

- jenjang pendidikan menengah (Minister of Education, Culture, Research, and Technology Regulation of the Republic of Indonesia Number 12 of 2024 on the Curriculum for Early Childhood Education, Elementary, and Secondary Education Levels). Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjaminan Mutu Pendidikan 1 (2024).
- Pratiwi, I. A., Rahmawati, A., Azman, M. N. A., Fajrie, N., & Mustofa, H. A. (2025, October). Development and effectiveness of multimedia interactive learning Scratch Wabimendu (World Indonesian Cultural Heritage). In *Frontiers in Education* (Vol. 10, p. 1628412). Frontiers.
- Pribadi, B. A. (2017). *Media & teknologi dalam pembelajaran* (Media and technology in learning). Jakarta: Kencana.
- Purnadewi, G. A. A., & Widana, I. W. (2023). Improving students' science numeration capability through the implementation of the PBL model based on local wisdom. *Indonesian Journal of Educational Development (IJED)*, 4(3), 307-317. <https://doi.org/10.59672/ijed.v4i3.3252>
- Ressi Kartika Dewi, Sary, K. R. C., & Hanifah, H. (2023). Pendidikan pancasila buku siswa kelas iii sd/mi (Pancasila education: Student book for Grade 3 elementary school/madrasah ibtidaiyah). In *Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi*.
- Sarira, M. J., Sabariah, S., & Suharti, S. (2025). Development of gamification-based html5 interactive learning media for human digestive system in elementary education. *Jurnal Paedagogy*, 12(4).
- Setiadi, Z. W., & Andriani, A. E. (2024). Development of interactive multimedia based on appy pie to improve learning outcomes of elementary school students. *Jurnal Penelitian Pendidikan IPA*, 10(7), 4048-4057.
- Shakeel, S. I., Al Mamun, M. A., & Haolader, M. F. A. (2023). Instructional design with ADDIE and rapid prototyping for blended learning: Validation and its acceptance in the context of TVET Bangladesh. *Education and Information Technologies*, 28(6), 7601-7630.
- Widana, I. W., Sumandya, I. W., Citrawan, I. W. (2023). The special education teachers' ability to develop an integrated learning evaluation of Pancasila student profiles based on local wisdom for special needs students in Indonesia. *Kasetsart Journal of Social Sciences*, 44(2), 527–536. <https://doi.org/10.34044/j.kjss.2023.44.2.23>
- Zulaiha, Z., Hartono, H., & Siahaan, S. M. (2025). Needs analysis for the development of web-based learning multimedia context climate change issues environmental issues content to support junior high school students' literacy. *Journal of Innovation and Research in Primary Education*, 4(3), 1481-1490.