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Validity and Practicality of Smart Apps Creator Interactive Media in Pancasila Education for Elementary Schools

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A B S T R A C T

This research is motivated by the fact that technology-based learning media is not yet optimally used by teachers in the learning process. Teachers have not yet provided students with the opportunity to use them directly and independently thru technological devices. This research aims to develop interactive media using Smart Apps Creator that is valid and practical. This research is a type of Research and Development study using the ADDIE model. Data was collected thru expert validation and teacher and student response practicality. The subjects of this research are fourth-grade students in one of the districts in Lima Puluh Kota Regency. The research results show that the interactive media developed using Smart Apps Creator is highly valid, with an average validity of 95.56%. The practicality test results of the interactive media show that it is very practical, with scores of 96% for teacher and 96.13% for student in the first school, 98% for teacher and 93.69% for student in the second school, and 96% for teacher and 95% for student in the third school. Thus, the interactive media developed using the Smart Apps Creator application is valid and practical for use in Pancasila Education learning in grade IV elementary school.

1. Introduction

The Merdeka Curriculum provides freedom for schools, teachers, and students to innovate, learn independently, and be creative, with teachers at the forefront of learning. Teacher skills are essential for creating an engaging and enjoyable learning process, which can help instill values in students and assist them in understanding concepts (Reinita, Jannah, & Sandika, 2023). Teachers must be able to create innovative learning in accordance with the demands of the Merdeka Curriculum in the digital age.

Learning media makes the learning process more engaging and interactive, and facilitates access to information and materials anytime, anywhere, thereby increasing students' involvement and understanding of the material (Reinita et al.,

2024). As an essential aid in the learning process, instructional media must be used effectively by teachers. In developing learning media, teachers must adapt to the characteristics of their students and their environment, as well as the times. To adapt to technological advancements in the digital age, a transformation from conventional learning systems to modern technology-based learning systems is necessary (Anita et al., 2022; Fitri et al., 2024). One of them is the use of technology-based learning media. The use of technology-based media in Pancasila Education learning in elementary schools can reduce student boredom and create a more interesting and enjoyable learning atmosphere. There are many technology-based learning media that teachers can use, one of which is interactive learning media.

Interactive learning media allows for two-way communication between the user and the media and can combine several elements such as text, images, animation, video, audio, graphics, and quizzes. The main characteristic of interactive learning media is that students are not only listening to the delivery of learning materials or objects, but are also encouraged to interact with the media, thus increasing their engagement in the learning process (Manurung, 2021). The use of interactive media in Pancasila Education learning can create a pleasant and non-monotonous learning atmosphere.

Interactive learning media can help teachers manage classroom learning and also increase students' motivation and engagement in the learning process. The use of interactive media in Pancasila Education can make the presented material more interesting because it can be adapted to students' learning styles and is also suitable for their era, which is very familiar with technology. This is evident from the habits of elementary school students who are already accustomed to using devices such as computers, laptops, and smartphones in their daily lives (Anita et al., 2022). The development of interactive learning media requires creativity and new innovations to increase students' enthusiasm and motivation in learning so that they can understand the learning material and apply the values they learn in Pancasila Education to their daily lives.

Based on observations conducted in several schools in one of the districts in Lima Puluh Kota, it was found that in Pancasila Education lessons, teachers tend to rely more on textbooks and student worksheets, and only occasionally use technology-based learning media such as PowerPoint and YouTube videos. Although teachers are able to use technology and schools have adequate facilities such as Wi-Fi access, laptops, projectors, and Chromebooks, these have not been optimally utilized by teachers to develop technology-based learning media. Additionally, teachers more frequently rely on textbooks and images and text pasted onto manila board. There are also teachers who have used technology-based learning media such as Powerpoint, Youtube videos, and Wordwall. However, the use of technology-based media is rarely used by teachers, who more often rely on materials and images from textbooks and printed images from the internet.

This resulted in students quickly becoming bored while studying due to low enthusiasm and motivation, making it difficult for them to understand the learning material. Some schools already have Wi-Fi, laptops, projectors, and Chromebooks

that students typically use during the National Computer-Based Assessment (ANBK), but teachers haven't fully utilized these resources to develop innovative learning media that students can use directly and independently on devices like laptops, Chromebooks, and smartphones. Technology-based learning media hasn't been optimally developed by teachers, so students haven't had the opportunity to use it directly and independently on devices like laptops, Chromebooks, and smartphones.

Therefore, research and development of interactive media for Pancasila Education learning in grade IV elementary school using Smart Apps Creator (SAC) is needed. This is expected to increase students' motivation and enthusiasm for Pancasila Education learning by using interactive media that can be used directly and independently, making learning more interesting and enjoyable. Additionally, this is expected to improve students' understanding of the learning material.

Smart Apps Creator is an application that can be used to create interactive learning media without requiring programming language skills. Learning media created using Smart Apps Creator can increase students' motivation and enthusiasm because this software can incorporate text, images, audio, video, and animation elements combined into one medium. Interestingly, this application can be opened on a laptop or computer without installing the main application and can also be installed on a smartphone (Dewi et al., 2021). Research conducted by Nissa dan Putera (2024) has proven that learning media developed using Smart Apps Creator is suitable for use in the elementary school learning process. This learning media developed has novelty in the material elements to be developed, namely interactive media for Pancasila Education subjects, Pancasila elements, material on the application of the meaning of Pancasila principles in daily life, as well as the design and components of the media used. The development of this interactive media using Smart Apps Creator will be carried out for Pancasila Education learning in the Merdeka Curriculum in grade IV elementary school.

2. Methodology

The type of research used is development research. Sugiyono (2019) explains that Research and Development is a scientific method used to research, design, produce, and test the validity of a product. In the development research to be conducted, the researcher chose the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation. The subjects of this development research trial were fourth-grade students in several schools in Lima Puluh Kota Regency. The interactive media developed and validated by validators was first tested in fourth grade at the first school with a total of 30 students, consisting of 13 boys and 17 girls. This was followed by implementation in the implementing school, second school, with a total of 13 students, consisting of 8 boys and 5 girls. In determining the research subject, several criteria were considered, including: (1) school conditions that met the research needs, namely having facilities that supported the use of interactive learning media; (2) teachers' ability to use technology and information; (3) the school's willingness to accept innovation; (4)

interactive learning media development using the Smart Apps Creator application had not been previously carried out at the school; (5) the school's location was accessible to the researcher.

Data collection instruments play an important role in gathering valid data to produce meaningful and reliable findings (Yasin, Garancang, & Hamzah, 2024). The results of the research data are highly dependent on the data collection instruments, namely: (1) The validation instrument is a validation sheet used to collect data on whether the developed interactive learning media is valid or not. Validation is carried out by expert lecturers as validators according to their expertise. The validation instrument includes material validation, media validation, and language validation; and (2) The practicality instrument for interactive learning media is useful for collecting data related to the practicality level of the developed interactive learning media. The instruments used include questionnaires for teacher and student responses to the practicality of the developed interactive learning media.

Validity analysis is conducted to examine the validity of the developed product. At this stage, the researcher uses the opinions of experts as validators. The validation instrument is a questionnaire used to collect valid data on the validity of the interactive media being developed using Smart Apps Creator. The instrument provided has answer options, with each answer having a category and a scoring assessment that can be seen in the following table 1.

Table 1. Learning Media Validity Assessment Scale

Score	Category
5	Very Good
4	Good
3	Quite Good
2	Poor
1	Very Poor

Source: Putera, Habibi, Chandra, dan Zuryanty (2024)

Next, for the calculation of the final validity score, we use the formula from (Zeda & Muliati, 2022), which is:

$$P = \frac{F}{N} \times 100\%$$

Description:

P = Percentage score
F = Score obtained
N = Maximum score

The category of values obtained after calculating the final data from the validity results can be determined using the following table 2:

Table 2. Interactive Media Validity Category

Percentage	Category
81 – 100%	Very Valid
61 – 80%	Valid
41 – 60%	Quite Valid
21 – 40%	Less Valid
0 – 20%	Not Valid

Source: Adapted from (Muhammadi & Yulianti, 2023)

Practicality analysis techniques are useful for analyzing data from the practicality test results of learning media, obtained from teacher response questionnaires and student response questionnaires after using the learning media. Practicality test results data are analyzed using the provisions in the table below, using a Likert scale as in Table 3.

Table 3. Teacher Response Questionnaire Rating Scale

Score	Category
5	Strongly Agree
4	Agree
3	Quite Agree
2	Disagree
1	Strongly Disagree

Source: Adapted from (Zeda & Muliati, 2022)

To calculate the final value of the practicality test results, the formula from (Zeda & Muliati, 2022) is used as follows:

$$P = \frac{F}{N} \times 100\%$$

Description:

P = Percentage score
F = Score obtained
N = Maximum score

Then, for the practicality category of learning media based on the final score calculation, it can be seen in the following table 4:

Table 4. Category of Interactive Media Practicality

Percentage	Category
81 – 100%	Very Practical
61 – 80%	Practical
41 – 60%	Quite Practical
21 – 40%	Less Practical
0 – 20%	Not Practical

Source: Adapted from (Reinita & Saralee, 2022)

3. Results and Discussion

this development research produced interactive media using the Smart Apps Creator application for Pancasila Education learning in grade IV elementary school. The material presented in the interactive media is "Attitudes and Behaviors that Reflect the Application of the Meaning of the Pancasila Principles in Daily Life." In this development research, the researcher used the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Sugiyono, 2019). Here are examples of products that have been designed and validated (Figure 1, Figure 2 and Figure 3).

Figure 1. Initial display of interactive media

Figure 2. Display of the main menu of interactive media

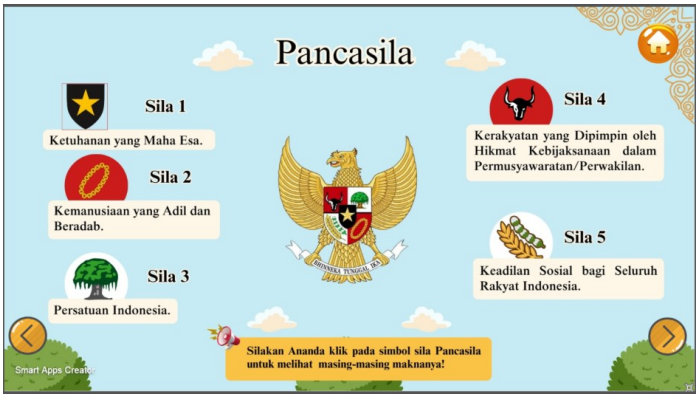

Figure 3. Display of learning materials

Figures 1, 2, and 3 above show examples of the interactive learning media that have been designed. Next, we enter the development phase, which is the stage for developing the interactive media that was previously designed using the Smart Apps Creator application. At this stage, validation of the material, language, and media aspects is carried out by three validators according to their respective expertise: a material expert, a language expert, and a media expert.

The content validity test was conducted once, yielding results in the very valid category. There are a few suggestions for improvement to separate the learning objective of inferring attitudes into two learning objectives: those that reflect and those that do not. Then, the learning media developed for the material aspect was declared suitable for use in the learning process with complete, systematic, and easy-to-understand material. The assessment results can be seen in the table 5:

Table 5. Validity Test Results for Content Aspect

No	Aspects being assessed	Score
Formulating CP and ATP		
1.	Learning media already includes learning achievements (CP) and learning objectives (TP).	5
2.	The formulation of CP and TP in the learning media is already in accordance with the completeness of the material.	5
3.	The formulation of CP and TP is already in accordance with the depth of the material.	5
4.	CP and TP are determined in accordance with the characteristics, curriculum, and Pancasila student profile.	5
5.	Learning objectives are formulated using easy-to-understand sentences.	4
Content Eligibility		
1.	Learning media presents material systematically.	5
2.	The material is in line with the development of science for the elementary school level.	5
3.	The integration between materials in the learning media is already evident.	5
4.	Images and videos in the media can clarify the material.	4
5.	The images and videos in the media are related to the material and are already interesting.	5
Total score obtained		**48**
Maximum score		**50**
Percentage		**96%**
Category		**Very Valid**

Based on the data above, it can be seen that the final result of the content validity test obtained a percentage of 96% with a very valid category. Thus, the interactive media developed using the Smart Apps Creator application is already suitable for use in the learning process in terms of content. Based on the results of the first language aspect validity test data calculation, a percentage value of 65.47% was obtained, categorized as valid, along with improvement suggestions from the validator to correct punctuation and some grammar usage. After the interactive media was revised according to the validator's improvement suggestions, the researcher continued the second language aspect validity test. In this second validity test, a percentage value of 94.67% was obtained, which is categorized as highly valid. The assessment results can be seen in the table 6:

Table 6. Validity Test Results for Content Aspect

No	Aspects being assessed	Score	
		Valida-tion I	Valida-tion II
Effective and Efficient Language Use			
1.	The learning media uses straightforward language, considering aspects of sentence structure accuracy and sentence effectiveness.	4	5
2.	Learning media uses spelling that is in accordance with the rules of the EYD V language.	3	4
3.	The language used does not have a double meaning.	3	5
4.	The sentence structure within a paragraph is coherent.	3	5
5.	Learning media uses precise word choices appropriate for student development.	4	5
Compliance with Language Rules			
1.	Grammatical accuracy.	3	5
2.	Accuracy in the use of prepositions.	3	4
3.	Accuracy in punctuation usage.	3	4
4.	Accuracy of word spelling.	3	5
5.	Accuracy in letter usage.	3	5
Clarity of Font Type			
1.	The font used is easy to read.	4	5
2.	Correct font size and spacing.	3	5
3.	Contrasting font and background colors make it easier to read.	4	5
4.	Consistency in font type and size.	3	4
5.	The layout is just right, making it easy to read.	3	5
Total score obtained		**49**	**71**
Maximum score		**75**	**75**
Percentage		**65,33%**	**94,67%**
Category		**Valid**	**Very Valid**

Based on the results of the language aspect validity test that has been conducted, the score obtained in the second validity test is greater than the first validity test. The overall assessment given by the validator in the second validity test is that it can be used without revision. Thus, it can be concluded that the interactive media developed using the Smart Apps Creator application is already suitable for use in the field with good and easy-to-understand grammar.

The validity test for the media aspect was conducted once, yielding results in the very valid category. There were a few suggestions for improvement to correct errors and descriptions on the sound off button. Then, the learning media developed in the media aspect was declared suitable for use in the learning process. The assessment results can be seen in the table 7:

Table 7. Results of the Media Aspect Validity Test

No	Aspects being assessed	Score
Media Display		
1.	The background on the learning media is appropriate and interesting.	5
2.	The title of the learning media is appropriate for the material and is already engaging.	5
3.	The colors and layout are already attractive and appropriate.	4
4.	The overall design of the learning media display is already appealing.	5

5.	Images and videos in learning materials add appeal.	5
Media Usage		
1.	Clarity of instructions and buttons in the learning media.	5
2.	The menu or features are easy to understand.	5
3.	Ease of use of interactive buttons.	5
4.	Learning media is flexible (can be used independently and with guidance).	4
5.	Effectiveness in use.	5
Total score obtained		**48**
Maximum score		**50**
Percentage		**96%**
Category		**Very Valid**

Based on the results of the media validity test data calculation, a percentage of 96% was obtained, which falls into the very valid category. Thus, the interactive media is declared valid and suitable for use in the learning process. Based on the calculation of the interactive media validity test results, the final scores obtained are 96% for the content aspect, 94.67% for the language aspect, and 96% for the media aspect (Table 8).

Table 8. Overall Final Results of the Validity Test

Aspects of Validity Testing	Percentage	Category
Material	96%	Very Valid
Language	94,67%	Very Valid
Media	96%	Very Valid
Average	**95,56%**	**Very Valid**

Thus, an overall final assessment of 95.56% was obtained, which falls into the "Very Valid" category. This category aligns with the validity category adapted from Muhammadi & Yulianti (2023), as shown in Table 3, where the interval of 81 – 100% falls into the very valid category. Based on the research results explained above, this development research produced interactive media using the Smart Apps Creator application for Pancasila Education learning in grade IV elementary school. The material presented in the interactive media is "Attitudes and Behaviors that Reflect the Application of the Meaning of the Pancasila Principles in Daily Life."

The initial stage in this development research is analysis, which consists of needs analysis, curriculum analysis, and content analysis thru observation and interviews. Next, the researcher designed an interactive medium using the Smart Apps Creator application based on the analysis results, which was then developed until it was suitable for implementation in elementary schools. The designed learning media contains the material "Attitudes and Behaviors that Reflect the Application of the Meaning of the Pancasila Principles in Daily Life." After the interactive media was designed using the Smart Apps Creator application, the development stage was then carried out. During the development phase, the interactive media's validity was tested by three expert lecturers: a content expert, a language expert, and a media expert, who completed validation sheets.

In the interactive media validity test, the validity percentage values obtained were 96% for the material aspect, 94.67% for the language aspect, and 96% for the media

aspect. The final result of the overall interactive media validity test obtained an average of 95.56% with the category "Very Valid". These results are consistent with Table 5, the interactive media validity categories adapted from Muhammadi & Yulianti (2023), where a percentage of 81 – 100% falls into the "Very Valid" category. Thus, interactive media is declared suitable for use in learning.

The next step is the implementation of the interactive media that has been developed in the pilot schools, implementation schools, and dissemination schools. Researchers conducted learning according to the teaching module with the help of interactive media that had been developed using the Smart Apps Creator application. Before conducting the learning using interactive media, the researcher administered a pretest to determine the students' level of knowledge regarding attitudes and behaviors that reflect the application of the meaning of the Pancasila principles in daily life before using the interactive media developed by the researcher. After learning using interactive media, the researcher administered a posttest to determine the achievement of learning objectives and the improvement in students' understanding and learning outcomes after using the interactive media. In addition, the researcher also distributed questionnaires on the practicality of teacher and student responses to determine the level of practicality of the interactive media developed using the Smart Apps Creator application.

The results of the practicality test for teacher responses obtained a percentage of 96% with the category "Very Practical" in the first school, a percentage of 98% with the category "Very Practical" in the second school, and in the third school, a percentage of 96% with the category "Very Practical". Meanwhile, the results of the practicality test for student responses in the first school obtained a percentage of 96.13% with the category "Very Practical". The results of the practicality test for student responses in the second school obtained a percentage of 93.69% with the category "Very Practical", and in the third school, Halaban, a percentage of 95% with the category "Very Practical" was obtained. The practicality test results for interactive media are in accordance with Table 6, the practicality categories of interactive media adapted from Reinita & Saralee (2022), which states that a percentage of 81 – 100% falls into the "Very Practical" category. Therefore, the interactive media developed using the Smart Apps Creator application is practical for use in learning.

This research is limited to the development of interactive learning media using the Smart Apps Creator application that is valid and practical. In accordance with the ADDIE research stages, namely Analysis, Design, Development, Implementation, and Evaluation. An analysis has been carried out consisting of needs analysis, curriculum analysis, and material analysis through observation and interviews. Then the design stage was carried out by creating a display on the Smart Apps Creator application as presented above. Next, the development stage was carried out, namely by refining the display and learning materials by involving experts. Then the implementation stage was carried out by implementing learning using the Smart Apps Creator application that had been created in schools. Then the evaluation stage was carried out through validation and practicality testing with teachers and students.

4. Conclusion

Research titled "Development of Interactive Media Using Smart Apps Creator in Pancasila Education Learning in Grade IV Elementary School" showed the following results: a material aspect validity test with a very valid category, a language aspect validity test with a very valid category, and a media aspect validity test with a very valid category. Based on these results, the overall average validity test result for interactive media was a very valid category. Thus, interactive media developed using the Smart Apps Creator application is suitable for use in the learning process. The development of interactive media using the Smart Apps Creator application has resulted in practical interactive media. This can be seen from the results of the teacher and student response questionnaires. The results of the teacher response questionnaire at the first school obtained a very practical category, at the second school it obtained with a very practical category, and at the third school it obtained with a very practical category. The results of the student response practicality test obtained with a very practical category at the first school, while at the second school it obtained with a very practical category for the student response questionnaire, and at the third school it obtained with a very practical category.

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