

DEVELOPMENT OF DIGITAL POP UP BOOK LEARNING MEDIA ON INDONESIAN CULTURAL DIVERSITY FOR GRADE IV AT SDN KENITEN 1

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Abstract

This study was motivated by the low learning outcomes of fourth-grade students at SDN Keniten 1 regarding the topic of Indonesian cultural diversity, attributed to a lack of concentration and the use of instructional media that lacked interactivity. The study aimed to develop a digital pop-up book as an instructional medium that is valid, practical, and effective for improving student learning outcomes. The Research and Development (R&D) method was employed using the ADDIE model, comprising the stages of Analysis, Design, Development, Implementation, and Evaluation. Data were collected through observation, interviews, questionnaires, and tests. The results indicated validity ratings of 78% from media experts and 94% from subject matter experts. Practicality scores reached 96% from teachers, 88.75% in the limited trial, and 96.87% in the field trial. The medium's effectiveness was demonstrated by a classical learning mastery rate of 87.5% in both trial stages, as well as N-Gain scores of 0.77 in the limited trial and 0.72 in the field trial. Thus, the digital pop-up book is deemed valid, practical, and effective for use in instruction.

Keywords: digital *pop up book*, Indonesian cultural diversity, Pancasila education, interactive media, elementary school

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1. Introduction

Indonesia is a country characterized by its rich cultural diversity. This diversity encompasses ethnic groups, regional languages, traditional houses, traditional clothing, traditional dances, regional songs, traditional musical instruments, and various customs distributed throughout the archipelago. Such cultural diversity represents one of the nation's identities that must be preserved and passed on to future generations. Therefore, education plays a crucial role in fostering students' understanding of and appreciation for cultural diversity from an early age [1][2].

At the elementary school level, Indonesian cultural diversity is taught as part of the Pancasila Education subject. This learning content aims to develop students' character by fostering tolerance, respect for differences, and a sense of pride and love for Indonesian culture and national identity [3]. Furthermore, learning about cultural diversity enables students to

recognize their national identity and understand the importance of maintaining unity within diversity [4]. However, the broad scope of the material often makes it difficult for students to understand and remember the various cultural elements originating from different regions of Indonesia [5].

Based on observations and interviews conducted at SDN Keniten 1 Mojo, it was found that learning activities related to Indonesian cultural diversity were still dominated by the use of textbooks and conventional lecture-based instruction. The limited use of instructional media resulted in low student participation during classroom activities. Many students appeared easily bored and had difficulty maintaining their attention while the teacher explained the material. Consequently, students' understanding of the subject remained low, and several students failed to achieve the Learning Objective Achievement Criteria (KKTP) established by the school.

Instructional media constitute one of the essential components of the teaching and learning process because they facilitate teachers in delivering learning materials in a more engaging and understandable manner [6]. Appropriate instructional media can improve students' attention, learning motivation, and classroom participation [7]. Therefore, instructional media capable of presenting Indonesian cultural diversity in an attractive, interactive, and age-appropriate manner are needed, particularly for elementary school students.

One instructional medium that can meet these needs is the Digital Pop Up Book. This medium integrates text, images, narration, animations, educational games, and interactive quizzes into a single learning platform. Through the integration of various multimedia elements, students are expected to experience more engaging and meaningful learning activities. In this study, the Digital Pop-Up Book presents learning materials covering the cultural diversity of seven Indonesian provinces: Aceh, West Sumatra, East Java, Bali, South Kalimantan, South Sulawesi, and Papua. The materials are presented visually and interactively to facilitate students' understanding of Indonesian cultural diversity [8].

Several previous studies have demonstrated that Pop-Up Book media can improve students' motivation and learning achievement. Research conducted by Kurniawati and Wahyuni revealed that Pop-Up Book media effectively improved elementary school students' learning outcomes [9]. Similarly, Rahmawati and Putra reported that the use of Pop-Up Book media significantly increased students' engagement during the learning process [10]. Nevertheless, studies focusing specifically on the development of a Digital Pop-Up Book for Indonesian cultural diversity that integrates audio narration, animations, educational games, and interactive quizzes for fourth-grade elementary school students remain limited [11].

Based on the aforementioned background, it is necessary to develop innovative instructional media that can help students understand Indonesian cultural diversity more effectively and attractively. Therefore, this study aims to develop a Digital Pop-Up Book learning medium for teaching Indonesian cultural diversity to fourth-grade students at SDN Keniten 1 Mojo. Specifically, the study seeks to determine the validity, practicality, and effectiveness of the developed learning media so that it can serve as an innovative alternative instructional medium for Pancasila Education learning

2. Research Method

This study employed the Research and Development (R&D) method to develop and evaluate a learning medium in the form of a Digital Pop-Up Book for teaching Indonesian cultural diversity to fourth-grade students at SDN Keniten 1. According to Sugiyono [12], Research and Development (R&D) is a research method used to produce a particular product and examine its effectiveness. The product developed in this study was a Digital Pop-Up Book designed to facilitate students' understanding of Indonesian cultural diversity. The development process followed the ADDIE instructional design model, which consists of five systematic stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model was selected because it provides a structured and systematic framework that is widely applied in the development of instructional media [13].

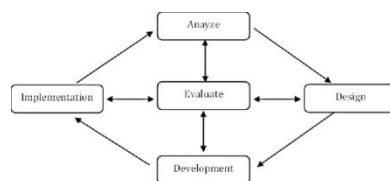


Figure 1. The ADDIE Development Model

The development procedure of the Digital Pop-Up Book learning media consisted of the following stages.

2.1 Analysis

The analysis stage was conducted to identify instructional needs related to the topic of Indonesian cultural diversity for fourth-grade students at SDN Keniten 1. Data were collected through classroom observations and interviews with the classroom teacher to identify the existing learning conditions, students' characteristics, instructional media currently used, and challenges encountered during the learning process. The findings indicated that students experienced difficulties in understanding the learning materials due to the extensive scope of the topic and the limited use of engaging instructional media. Therefore, developing a Digital Pop-Up Book that addressed students' learning needs was considered necessary.

2.2 Design

During the design stage, the learning media were planned based on the results of the needs analysis. This stage included preparing the learning materials, designing the media flow, creating the user interface, selecting illustrations, animations, audio narration, and developing interactive quizzes and educational games. The Digital Pop-Up Book was developed using Microsoft PowerPoint and Canva. The interface was designed according to the characteristics of elementary school students to ensure that the media were visually appealing, easy to operate, and capable of supporting the intended learning objectives.

2.3 Development

The development stage involved transforming the design into a functional Digital Pop-Up Book learning medium. The product incorporated instructional materials on Indonesian cultural diversity, animations, narration, and educational games to create an engaging learning experience. After the development process was completed, the product was evaluated by media experts and subject matter experts to assess its visual appearance, content quality, presentation, and usability. The suggestions and recommendations provided by the validators were used to revise and improve the product before it was implemented in classroom learning activities.

2.4 Implementation

The implementation stage involved testing the Digital Pop-Up Book with fourth-grade students at SDN Keniten 1. The implementation consisted of two phases: a limited trial and a field trial. The limited trial aimed to obtain preliminary feedback regarding the practicality of the learning media, whereas the field trial was conducted to evaluate its effectiveness in improving students' learning outcomes. Data were collected through teacher response questionnaires, student response questionnaires, and learning achievement tests administered after students had used the Digital Pop-Up Book.

2.5 Evaluation

Evaluation was conducted continuously throughout each stage of the development process. This stage aimed to determine the validity, practicality, and effectiveness of the Digital Pop-Up Book learning media. The evaluation results served as the basis for revising and improving the product to ensure that the developed media met the required quality standards and were suitable for use in teaching Indonesian cultural diversity at the elementary school level.

3. Results and Discussion

At the design stage, the researcher developed the Digital Pop-Up Book media design based on the results of the needs analysis. The material developed covers the cultural diversity of seven provinces: Aceh, Bali, West Sumatra, East Java, South Sulawesi, Papua, and South Kalimantan. The media was designed using PowerPoint and Canva. The media structure consists of a cover page, researcher profile, user guide, table of contents, learning materials, educational games, interactive quizzes, and references. In addition, the media is equipped with animations, images, background music, and explanatory audio to enhance students' interest and engagement during the learning process. The results of this media design can be seen in Figure 2, which presents the design of the Digital Pop-Up Book learning media below:



Figure 2: Design of the digital pop-up book learning media

Based on Figure 2, which presents the design of the Digital Pop-Up Book learning media, this media was designed with an attractive and interactive appearance that is appropriate for the characteristics of elementary school students. The design serves as a reference in the subsequent stages of the media development process, resulting in a product that aligns with the learning objectives

3.1.3 Development Stage

At the development stage, the initial design was transformed into a complete Digital Pop-Up Book learning medium. After the product had been developed, it was validated by media experts and subject matter experts to determine its feasibility.

Table 1. Validity Results of the Digital Pop-Up Book Learning Media

Validator	Percentage	Category
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Subject Matter Expert	94%	Very Valid
Media Expert	78%	Valid
Average	86%	Very Valid

As presented in Table 1, the Digital Pop-Up Book obtained an average validity score of 86%, indicating that the learning media were categorized as very valid. This result demonstrates that the developed product fulfilled the criteria related to content accuracy, visual appearance, presentation, and usability. The media expert stated that the Digital Pop-Up Book featured an attractive interface, was easy to operate, and incorporated interactive features appropriate for elementary school students. Meanwhile, the subject matter expert confirmed that the learning materials were aligned with the intended learning outcomes, instructional objectives, and the characteristics of fourth-grade students. The recommendations provided by both validators were used as the basis for revising and improving the product before classroom implementation.

3.1.4 Implementation Stage

The implementation stage aimed to determine the practicality of the developed Digital Pop-Up Book learning media. The product was tested with fourth-grade students at SDN Keniten 1, while the classroom teacher participated as the learning practitioner. The practicality of the media was evaluated using teacher and student response questionnaires after the learning activities had been completed. The teacher's questionnaire produced a practicality score of 96%, which falls into the very practical category. This finding indicates that the Digital Pop-Up Book is easy to use, facilitates teachers in delivering instructional materials, and supports the effectiveness of classroom learning. The practicality of the media was further evaluated through a limited trial involving eight students, resulting in a score of 88.75%, which was also categorized as very practical. Students reported that the media were attractive, easy to operate, and enjoyable because they included educational games and interactive quizzes. Subsequently, a field trial involving 16 students yielded a practicality score of 96.87%, which also fell into the very practical category. This result indicates that the Digital Pop-Up Book successfully enhanced students' engagement throughout the learning activities.

Table 2. Practicality Results of the Digital Pop-Up Book Learning Media

Data	Percentag	Category
Teacher Practicality	96%	Very Practical
Student Practicality (Limited Trial)	88,75%	Very Practical
Student Practicality (Field Trial)	96,87%	Very Practical

Overall, the teacher responses and the results of both implementation stages indicate that the Digital Pop-Up Book is highly practical and suitable for classroom use. During the learning activities, students appeared more enthusiastic, actively participated in discussions, and demonstrated greater engagement than during conventional classroom instruction.

3.1.5 Evaluation Stage

The evaluation stage was conducted continuously throughout the development process to ensure the quality of the learning media. In addition to evaluating validity and practicality, the effectiveness of the Digital Pop-Up Book was measured based on students' learning outcomes before and after using the media. Formative evaluation was carried out through revisions based on suggestions provided by the media expert, subject matter expert, classroom teacher, and students. Meanwhile, summative evaluation focused on determining the overall validity, practicality, and effectiveness of the developed product.

Table 3. Effectiveness of the Digital Pop-Up Book Based on Learning Mastery

Data	Percentag	Category
Limited Trial	87,5%	Excellent
Field Trial	87,5%	Excellent

The limited trial showed that seven out of eight students achieved learning mastery, whereas one student had not yet reached the predetermined mastery criterion, resulting in a classical learning mastery rate of 87.5%. Similarly, in the field trial, 14 out of 16 students achieved learning mastery, while two students did not, resulting in the same mastery percentage of 87.5%. These findings demonstrate that the Digital Pop-Up Book effectively facilitated students' understanding of Indonesian cultural diversity and met the effectiveness criteria for classroom implementation. To determine the improvement in students' learning outcomes after using the learning media, an N-Gain analysis was conducted.

Table 4. N-Gain Analysis Results

Data	N-Gain	Category
Limited Trial	0,77	High
Field Trial	0,72	High

The N-Gain analysis revealed a score of 0.77 in the limited trial and 0.72 in the field trial. Both values fall into the high category, indicating a significant improvement in students' learning outcomes after using the Digital Pop-Up Book. These improvements were reflected in the increase in students' average post-test scores compared with their pre-test scores in both implementation stages. Therefore, the developed Digital Pop-Up Book not only fulfilled the criteria of validity and practicality but also proved to be effective in improving students' understanding of Indonesian cultural diversity.

3.2 Discussion

The research results indicate that the developed Digital Pop-Up Book meets the criteria of validity, practicality, and effectiveness for use in teaching the subject matter of Indonesia's cultural diversity. These findings demonstrate that the developed medium supports the learning process and helps students understand the material more easily and engagingly.

Based on validation results, the Digital Pop-Up Book achieved an average score of 86%, placing it in the "highly valid" category. This figure comprises a 94% rating from subject matter experts and an 87% rating from media experts. These results show that the developed medium

satisfies criteria regarding content suitability, visual design, language, and instructional presentation. A valid medium helps students acquire information aligned with learning objectives and the characteristics of the material being studied.

Regarding practicality, the Digital Pop-Up Book achieved a score of 96% based on teacher feedback, 88.75% in the limited trial, and 96.87% in the extensive trial, falling into the "highly practical" category. These results indicate that the medium is easy for both teachers and students to use. Furthermore, the attractive design and the inclusion of animations, audio, games, and interactive quizzes help boost student interest in learning. During the learning process, students appeared more active, enthusiastic, and engaged compared to when conventional learning media were used.

Regarding effectiveness, learning mastery results showed a rate of 87.5% in both the limited and extensive trials, falling into the "very good" category. Furthermore, N-Gain calculations yielded scores of 0.77 for the limited trial and 0.72 for the extensive trial, both classified as "high." These results indicate that the use of the Digital Pop-Up Book medium successfully improved student learning outcomes concerning the topic of Indonesia's cultural diversity. This improvement occurred because the medium presents material more concretely through a combination of text, images, audio, and interactive activities, helping students grasp learning concepts more easily.

The novelty of this study lies in the development of an interactive, three-dimensional digital learning medium known as the Digital Pop-Up Book. This medium utilizes the researcher's voice recordings to assist students in understanding the material on Indonesia's cultural diversity through a blend of written and audiovisual content. Additionally, the researcher used the Canva application to develop engaging game and quiz features. The medium also incorporates realistic animations; the integration of these various features creates a learning experience that is engaging, interactive, and well-suited to the characteristics of students in the digital age. Consequently, the medium is expected to capture students' attention while enhancing their understanding of Indonesia's cultural diversity.

Based on the research findings, the Digital Pop-Up Book is deemed suitable for use as a learning medium for the topic of Indonesia's cultural diversity. It offers an innovative alternative that can help teachers create a learning process that is more engaging, interactive, and student-centered.

4. Conclusion

Based on the research and development of the Digital Pop-Up Book learning media regarding the topic of Indonesian cultural diversity for fourth-grade students at SDN Keniten 1, it can be concluded that the developed media meets the criteria of validity, practicality, and effectiveness for use in the learning process. The media's validity achieved an average score of 86%, placing it in the "highly valid" category according to assessments by subject matter and media experts. Regarding practicality, the media achieved a score of 96% based on teacher feedback, 88.75% in the limited trial, and 96.87% in the extensive trial, all falling within the "highly practical" category.

Furthermore, the media proved effective in improving student learning outcomes; this was demonstrated by a learning mastery rate of 87.5% in the limited trial and N-Gain scores of 0.77 (limited trial) and 0.72 (extensive trial), both of which fall into the "high" category. Thus, the Digital Pop-Up Book learning media serves as an innovative and interactive alternative to assist students in understanding the material on Indonesian cultural diversity. Future research is recommended to develop media covering a broader range of topics, incorporate a wider variety of interactive features, and implement the media with a larger number of subjects to obtain more comprehensive results.

References

- [1] Koentjaraningrat. (2021). *Introduction to Anthropology*. Jakarta: Rineka Cipta.
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- [2] Ranjabar, J. (2020). Indonesian Socio-Cultural Systems. Bandung: Alfabeta.
 - [3] Ministry of Education, Culture, Research, and Technology. (2022). Learning Outcomes for Pancasila Education: Phase B. Jakarta: Kemendikbudristek.
 - [4] Ministry of Education, Culture, Research, and Technology. (2022). Guidelines for Learning and Assessment in the Independent Curriculum (Kurikulum Merdeka). Jakarta: Kemendikbudristek.
 - [5] Susanto, A. (2021). Learning Theories and Instruction in Elementary Schools. Jakarta: Prenadamedia Group.
 - [6] Rohani. (2019). Instructional Media. Medan: UINSU Press.
 - [7] Arsyad, A. (2023). Instructional Media. Jakarta: Rajawali Pers.
 - [8] Tafonao, T. (2018). "The Role of Instructional Media in Increasing Student Learning Interest." *Journal of Educational Communication*, 2(2), 103–114.
 - [9] Kurniawati, N., & Wahyuni, S. (2023). "The Effectiveness of Pop-Up Book Media in Improving Motivation and Learning Outcomes of Elementary School Students." *Basicedu Journal*, 7(2), 1120–1128.
 - [10] Rahmawati, A. S., & Putra, E. H. (2022). "Development of Pop-Up Book Media to Improve Elementary School Student Learning Outcomes." *Journal of Basic Education*, 13(1), 45–54.
 - [11] Branch, R. M. (2020). Instructional Design: The ADDIE Approach. New York: Springer.
 - [12] Sugiyono. (2022). Research and Development (R&D) Methods. Bandung: Alfabeta.
 - [13] Branch, R. M. (2020). Instructional Design: The ADDIE Approach. New York: Springer
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