



Development of problem-solving-based digital books to improve students' high-level thinking skills

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ABSTRACT

High-level thinking skills are essential skills that students need to have in elementary school. This ability helps to conceptualize and deal with problems faced in everyday life. This research is motivated by the need for teachers to access digital textbooks to help implement the learning process. This study aimed to assess digital textbooks' effect on improving fifth-grade students' critical thinking skills. The research location was at SD Negeri 104230 in Tanjung Sari Village, Batang Kuis District, Deli Serdang Regency, North Sumatra. Thirty fifth-grade students registered in the 2023-2024 academic year became the research sample. This study applies a research and development methodology with the ADDIE model. The study results showed that validation from media, material, and language experts had met the criteria and was feasible. Using digital textbook media has improved students' critical thinking skills towards digital media. In addition, the study results showed that digital textbook media problem solving is effective for learning Pancasila education, especially related to cultural diversity as the nation's cultural identity.

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ABSTRAK

Kemampuan berpikir tingkat tinggi menjadi kemampuan penting yang perlu dimiliki oleh peserta didik di sekolah dasar. Kemampuan ini membantu untuk mengonsep dan mengani masalah yang dihadapi pada kehidupan sehari-hari. Penelitian ini dilatarbelakangi oleh kebutuhan guru terhadap akses buku teks digital untuk membantu pelaksanaan proses pembelajaran. Tujuan dari penelitian ini adalah untuk menilai pengaruh buku teks digital dapat meningkatkan kemampuan berpikir kritis siswa kelas lima. Lokasi penelitian di SD Negeri 104230 di Desa Tanjung Sari Kecamatan Batang Kuis Kabupaten Deli Serdang Sumatera Utara. Tiga puluh siswa kelas lima yang terdaftar pada tahun ajaran 2023-2024 menjadi sampel penelitian secara keseluruhan. Penelitian ini menerapkan metodologi penelitian dan pengembangan dengan model ADDIE. Hasil penelitian menunjukkan bahwa validasi dari ahli media, ahli materi, dan ahli bahasa telah memenuhi kriteria dan layak untuk digunakan. Penggunaan media buku teks digital telah terbukti meningkatkan kemampuan siswa berpikir kritis terhadap media digital. Selain itu, hasil penelitian menunjukkan bahwa media buku teks digital pemecahan masalah efektif untuk pembelajaran pendidikan Pancasila, khususnya berkaitan dengan keragaman budaya sebagai identitas budaya bangsa.

Kata Kunci: digital book; keterampilan berpikir tingkat tinggi; pemecahan masalah

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INTRODUCTION

Education is an effort to empower learners to develop their innate capacity. Education is an effort that aims to develop individual abilities, especially students, by providing direction and facilitating learning activities (Astalini et al., 2018). By applying this knowledge, people can increase their capacity to deal with changes due to technological and scientific advances (Putra & Anggraini, 2016). The progress in society is expected to take greater initiative in all fields, including education, which plays an important role in creating competitive and superior human resources. Educational experts utilize learning media to help students understand and absorb information. The existence of learning media can help convey knowledge about abstract ideas that may be difficult for learners to understand and assist in facilitating learning.

Through education, research, or experience, acquiring knowledge or skills, teachers are required to be able to create teaching materials that disseminate academic content efficiently (Ninawati et al., 2021). In addition, teachers also need to ensure that learners can easily achieve their goals, and the smoothness of the learning process is highly dependent on selecting appropriate educational tools (Dita, 2022; Martin & Simanjourang, 2022; Sholeh, 2019). In addition to other learning media, magazines, brochures, and digital books are essential for creating a stimulating and effective learning environment. Digital books can be incorporated into different educational resources and customized to suit specific subjects, such as teaching and learning exercises (Zahwa & Syafi'i, 2022; Atikah & Prihatin, 2021). Through the development of advanced cognitive capacities, this endeavor aims to improve learners' ability to express their opinions clearly, orally, and in writing.

Teachers should apply learning models that match each learner's unique qualities and goals during the learning process. This ensures that learners maintain their interest in the educational journey and understand the basic principles of the material provided. The problem-solving learning paradigm is often applied in institutions that embrace an independent curriculum. This seems important for conducting educational exercises. In the book "How to Assess Higher-Order Thinking in Your Classroom," Brookhart defines higher-order thinking skills (HOTS) as cognitive skills, including problem solving, decision making, logical ability, reasoning, analysis, evaluation, and production. Higher-order thinking skills (HOTS) empower people to efficiently apply newly acquired information or pre-existing knowledge to generate solutions to unfamiliar situations. Advanced cognitive abilities are necessary for academic success (Heong et al., 2011).

The right learning media can influence the improvement of students' thinking skills. Various kinds of learning media have been developed to increase the chances of such efforts. Using the Kvisoft Flipbook application, which functions as a digital book, is one of the efforts to improve higher-order thinking skills through complex problem solving (Parinduri & Rambe, 2022). Another study conducted an independent investigation to assess the validity of interactive image e-books for practicing higher-order thinking skills (HOTS) (Julaika & Syaputra, 2022). The effectiveness of e-books in improving learners' learning outcomes and their readability is a measure used to determine their usefulness by looking at the success of the educational process, as assessed from learners' comments and feedback, which can be considered satisfactory.

Interview and observation data obtained by the researcher show a clear problem: learners cannot think at a higher level. Daily tests and questions given to learners who do not meet the critical thinking requirements throughout the curriculum show this. Most questions relate to lower-level cognitive capacities (C1 and C2). As teachers continue to use lecture-based pedagogy, learners often find it difficult to answer questions that require advanced cognitive skills. The learning environment produced by the old-fashioned pedagogical approach is boring and lacks learner enthusiasm. As stated by Ennis in the book "The Nature of Critical Thinking: An Outline of Critical Thinking Disposition and Abilities", Bloom's taxonomy classifies producing (C6), assessing (C5), and analyzing (C4) as cognitive domains associated with higher-order

thinking. The lack of effectiveness of C1 and C2 questions in encouraging the growth of students' higher-level thinking skills. The results of an interview with the homeroom teacher of class fifth grade SD Negeri 104230 Tanjung Sari show that confident children have difficulty conceptualizing new ideas and are unable to deal with real-world problems, which shows a lack of higher-order thinking skills, especially in areas related to Indonesian cultural diversity.

This is quite alarming considering that Indonesia's cultural diversity is one of the important elements that must be taught to students as a bridge to understanding the concept of tolerance and respect for cultural differences (Anggo et al., 2023). After evaluating this problem, modifying the teaching and learning process is imperative to revive learners' interest in education. To overcome these barriers and improve learners' understanding of the principles of the subject matter, the development of inventive educational resources is essential. Digital texts designed to improve problem-solving skills are adequate educational resources that can be used (Ambarwati et al., 2021; Mahuda et al., 2021; Susanto & Usman, 2024). Multimedia resources, including animation, video, and audio, offer many benefits when incorporated into problem-solving-oriented digital texts. Sprague and Hunter have demonstrated the capacity of this technique to capture learners' attention in their book "Assessing E-book Statistics". This upcoming digital book will emphasize problem solving and incorporate visuals. Based on these potentials, the researcher intends to develop a digital textbook to improve higher-order thinking skills, especially in areas related to Indonesian cultural diversity.

LITERATURE REVIEW

Learning Media

Media comprises all instruments necessary to communicate with learners (Martin & Simanjorang, 2022). Media encompasses a variety of entities, including individuals, materials, and events, that facilitate learners' acquisition of knowledge, skills, and dispositions. Considering its limitations, media can be characterized as an instrument or medium of communication in the form of audio-visual or printed materials used to convey information or messages from the sender to the receiver. In addition, the media facilitate the development of learners' attitudes, competencies, and knowledge throughout the learning process. Media is any means that enables communication between the sender and the receiver (Rosyiddin et al., 2023; Talaksoru et al., 2024). Media also plays an important role in education by enabling good communication between teachers and students to increase the effectiveness of the teaching and learning process (Widiyanto, 2021). In addition, media use also aims to excite and motivate students, thus encouraging the retention of learned knowledge. Learning media can improve academic standards (Handayani et al., 2018; Suchyadi et al., 2022).

Digital Book Learning Media

The rapid advancement of technology in education has given birth to new ideas in technology-based learning. Digital or electronic books are one example of the latest advances in education. Digital books, sometimes e-books, are computer-based presentations of information in various media (text, photos, audio, video, and multimedia). According to Ruddamayanti, in a national seminar entitled "Pemanfaatan Buku Digital dalam Meningkatkan Minat Baca," the books concerned are short, engaging, and work with computers and other technological devices. Textbooks converted to digital formats are known as digital books or e-books. They are also considered learning environments because they use multimedia database-based applications as learning tools. The database consists of multimedia presentations covering the various subjects covered in the book (Syahputra, 2020). Digital books represent technological advances in digitally printed books, providing a practical and pragmatic educational substitute (Haryanti &

Mundilarno, 2024; Komara & Hadiapurwa, 2023). These materials are available at all times and in all locations. According to the definitions given by experts, digital books are books that can be accessed in digital format and consist of text and images. Electronic publications can be accessed and read on various devices, including mobile phones and computers.

Problem-Solving

Problem-solving techniques emphasize higher-order cognitive skills to solve complex problems, including motivation, self-confidence, emotional intelligence, and problem-solving control. By using problem-solving techniques, one can transcend barriers in a particular field of study or subject. Through this teaching approach, learners are expected to apply critical, analytical, systematic, and logical thinking to identify solutions to other problems. The goal is to encourage a scientific point of view (Caprioara, 2015; Syachtiyani & Trisnawati, 2021). All learners should learn how to solve problems, a lifelong skill. Learners proficient in problem-solving will be better able to recall material and create connections in their long-term memory (Mataka et al., 2014).

The problem-solving approach incorporates certain activities that are also present in alternative learning methodologies, including debriefing, dialogue, inquiry, and solution sessions. The process further illustrates a problem-solving methodology postulated explicitly (Table 1).

Table 1. The Steps of Problem Solving

Steps	Required Skills
Define the problem.	Understand and articulate the problem precisely.
Analyze the problem.	Apply expertise to a detailed analysis of the problem from multiple perspectives.
Create a hypothesis.	Consider and appreciate alternatives, causes, and effects of scope.
Collect and organize data to support the hypothesis.	Ability to locate, organize, and present data using diagrams, figures, and tables.
Confirm the hypothesis.	Ability and aptitude to analyze and discuss data, correlate and quantify information, and make decisions.
Determine the solution option.	The capacity to generate alternative solutions and consider the impacts associated with each decision.

Source: Gulo in the book "Strategi Belajar Mengajar"

Higher Order Thinking Skills

Thinking skills include using rationality to gain meaning and understanding from certain situations, examining concepts, making decisions, considering problem solutions, and reevaluating previous thinking processes (Susetyo & Firmansyah, 2023). Cognitive capacity relates to using mental abilities to investigate concepts, seek meaning and understanding, consider optimal solutions, and correct errors caused by previous cognitive processes.

Hamidah, in the book "Higher Order Thinking Skill (Seni Melatih Kemampuan Berpikir Tingkat Tinggi)", defines higher order thinking ability as a cognitive process involved in assimilating new information and retrieving previously stored data from memory. To achieve the expected goals and evoke significant responses, these abilities must develop connections between diverse knowledge and communicate it effectively. As Thomas & Thorne define HOTS (Higher Order Thinking Skills), they are more than just learning, saying, or using facts, rules, formulas, and processes. High-level thinking talent is described by Hamidah in the book "Higher Order Thinking Skills (Seni Melatih Kemampuan Berpikir Tingkat Tinggi)" as the ability to reason and solve complex problems in order to answer complex questions or deal with circumstances and cases. The capacity to analyze, assess, and develop new solutions to problems

critically and creatively is the definition of higher-order thinking skills.

Pancasila Education

The transition from the previous subject designation as Pendidikan Pancasila dan Kewarganegaraan (PPKn) to an autonomous curriculum is called "Pendidikan Pancasila". Acquiring Pancasila education is essential to instill in learners a sense of national pride and an understanding of their responsibilities as citizens; it gives learners the ability to actively implement the ideas of Pancasila in all aspects of life, including at school. According to Ketut Rindjin in a book entitled "Pendidikan Pancasila untuk Perguruan Tinggi," Pancasila education is a type of teaching that emphasizes the delivery of knowledge and understanding of Pancasila and its principles and the real application of Pancasila ideals in everyday life. According to Ahmad Rifai in the book "Penemuan hukum oleh hakim: dalam perspektif hukum progresif", Pancasila education is one element of the curriculum that seeks to help students become honorable, intelligent, responsible, and involved Indonesian citizens. Another opinion states that Pancasila Education is recognized as having a significant influence on the formation of national character (Yunita et al., 2024). The long-term development of a country is highly dependent on strong character (Budiarto, 2020; Mahadiansar et al., 2020). From the above position, the researcher concludes that Pancasila Education is a learning process that aims to instill and develop the values contained in Pancasila as the foundation of the state and the view of the life of the Indonesian nation.

METHODS

The method used in this research is a research and development methodology using the ADDIE model. The steps include analysis, strategy, development, implementation, and assessment. With a special focus on fifth-grade children, the research was conducted at SD Negeri 104230 Tanjung Sari, Batang Kuis District. The second semester of the 2023-2024 school year began in January with the completion of this research and development. Thirty students in the fifth grade participated in the study. This study used various data collection techniques, including advanced cognitive ability tests, questionnaires, and observations. Furthermore, descriptive qualitative and quantitative data analysis approaches were used in this study. In the quantitative data analysis, Likert scale categories were used, which were further processed and analyzed into percentage measurements to determine the feasibility of the product developed by the researcher.

RESULTS AND DISCUSSION

Results

Analysis

The initial stage of this research included an analysis based on the findings of the research conducted at SD Negeri 104230 Tanjung Sari. These findings became references and provided insights for developing problem-solving-based digital books. This step includes assessing teacher needs, evaluating learner needs, analyzing tools used for learning, examining curriculum and resources, and looking at learning objectives.

Design

The purpose of the design stage is to create an educational tool in the form of a product. The resulting product is a digital book focusing on problem-solving to improve students' advanced cognitive abilities.

This problem-solving-based digital book was created as a learning resource that contains a problem-solving approach.

Cover: the front cover contains the subject title, learning materials, supporting images, grade level, creator's name, and logo. The back cover contains supporting images (Figure 1).

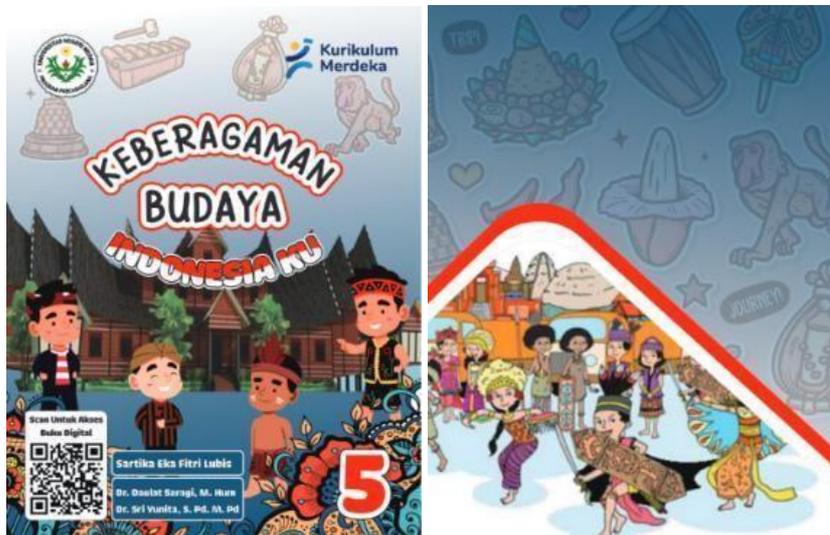


Figure 1. Digital Book Cover
Source: Author's Documentation 2024

Introduction: The digital book's preface includes a preface, table of contents, and learning objectives (Figure 2).

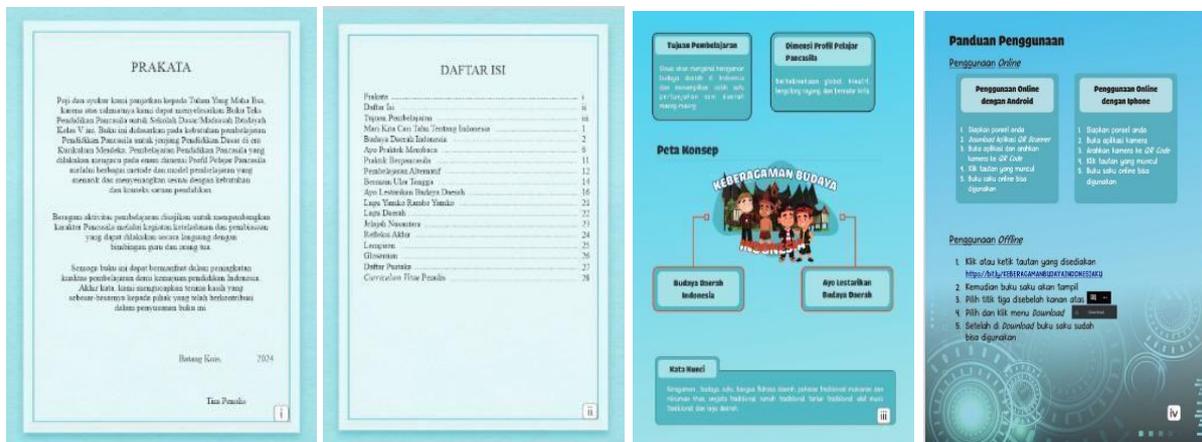


Figure 2. Digital Book Introduction Section
Source: Author's Documentation 2024

Digital book: The learning activities in the digital book are 34 pages long and consist of titles, submaterials, evaluations, and a glossary.

Development

In the development stage, the advanced stage of the design process, previously prepared concepts are refined and transformed into commercially viable products. Before use, the product must undergo validation testing to ensure its practicality and suitability. The validation process is carried out by

knowledgeable instructors in the field of material experts on cultural diversity, media experts for digital book displays, and linguists to adjust the grammatical arrangement in digital books. The material expert validation process is carried out based on the feasibility of problem-solving-based digital book content in the form of the suitability of material content with learning objectives, the accuracy of the information presented in the digital book, and the feasibility of content according to the level of understanding and needs of digital book users. The evaluation carried out by material experts at stage I received a score of 74% in the 'good' category. Seeing the lack of this figure, further improvements were made to the feasibility of digital books based on problem-solving. Finally, stage II got 92% in the 'outstanding' category. The following data presents the results of the material expert validation presented in **Figure 3** below.

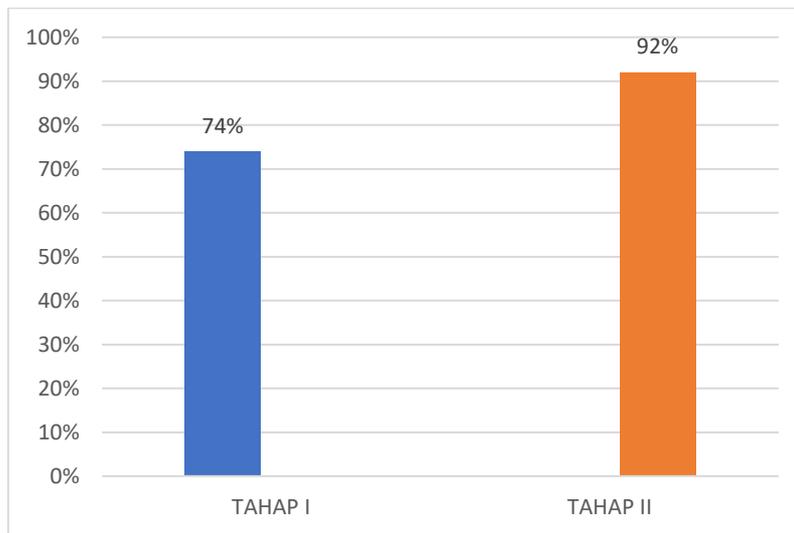


Figure 3. Material Expert Validation Results
Source: Research 2024

The media expert validation process is carried out based on the practicality of problem-solving-based digital book content in the form of an attractive digital book visual display, easy access on various electronic devices such as smartphones, PCs, tablets, and so on, and the availability of digital books at any time. The results of the validation process carried out by media experts at stage I were 76% in the 'good' category. After making improvements, 84% were obtained in the 'outstanding' category for stage II. The following data presents the results of media expert validation, as shown in **Figure 4** below.

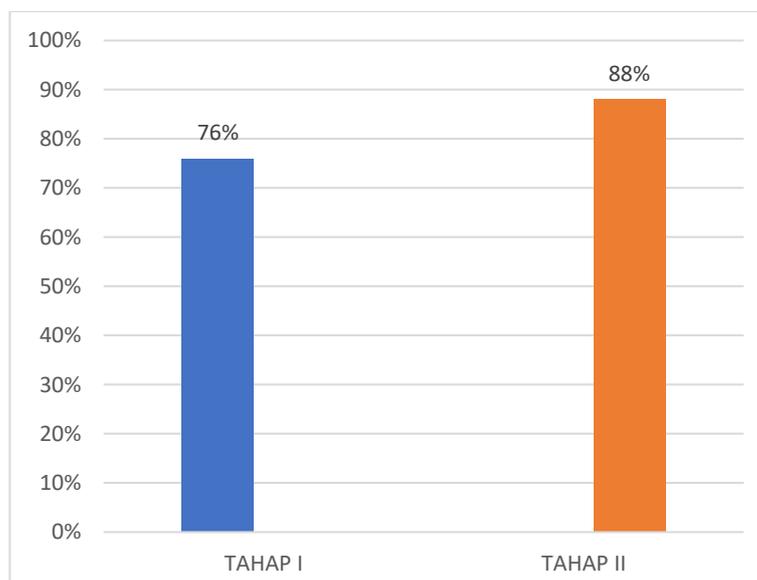


Figure 4. Media Expert Validation Results
Source: Research 2024

The linguistic validation process is carried out based on the feasibility of problem-solving-based digital books using grammar by Indonesian language rules, composing language that is easy to understand, using language levels according to user understanding, and using precise phrases so as not to cause misunderstanding. The results of the validation process by linguists at stage I were 75% in the 'good' category. After making improvements, 84% of the results were obtained in the 'outstanding' category for stage II. The following data presents the results of linguistic validation, as shown in **Figure 5** below.

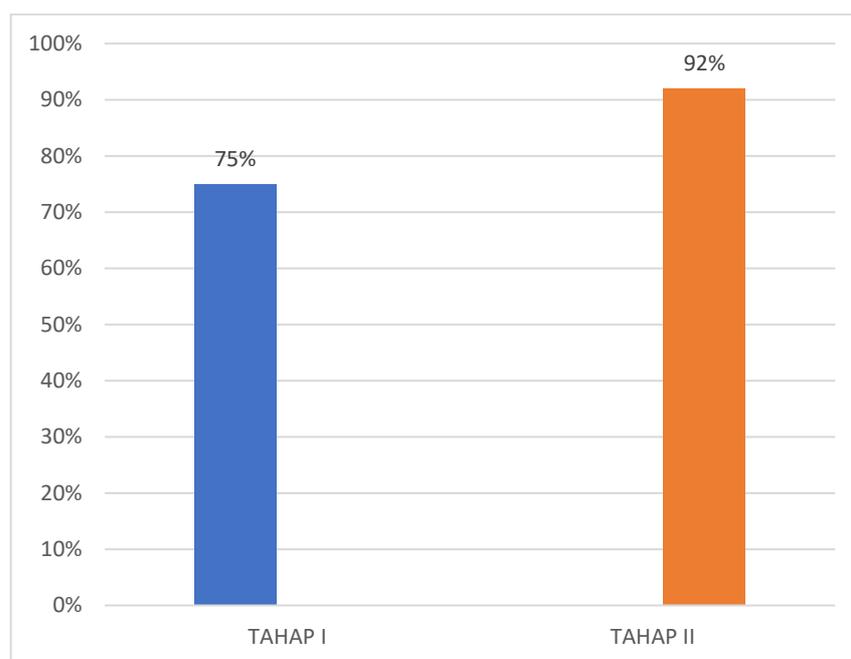


Figure 5. Media Expert Validation Results
Source: Research 2024

Classroom educators were also given access to the product to evaluate and provide feedback. The evaluations provided as recommendations for improvement became a strategic guideline for researchers to improve the digital book and turn it into a superior quality product.

Implementation

In the implementation stage, a group of experts conducted validation testing of the problem-solving-based digital book product. Classroom instructors and validators provide feedback and suggestions, which are incorporated into the final product. After that, testing was carried out on both small and large groups. The digital textbook teaching materials were integrated into fifth-grade classrooms at SDN 104230 Tanjung Sari. Learners' reactions to the developed problem-solving digital texts were evaluated during the implementation phase. This was achieved through the distribution of learner questionnaires. Below is a breakdown of the results of the experiments conducted during the implementation phase.

1. Teacher's Response to the Feasibility of Digital Book Based on Problem-Solving

In the next stage, the teacher responds to the form of a feasibility assessment of the problem-solving-based digital book. The feasibility assessment involved one educator as a fifth-grade teacher of SD

Negeri 104230 Tanjung Sari. The data from the teacher's assessment sheet of the problem-solving-based digital book based on the results of the teacher's assessment on the aspects of the content, presentation and appearance of the digital book reached 93%. If matched with the digital book eligibility criteria, this score is included in the outstanding category or with the achievement of being very feasible to use in the learning process of fifth grade SD Negeri 104230 Tanjung Sari.

2. Students' Response to the Feasibility of Digital Books Based on Problem-Solving

The small group trial was given to 8 randomly selected fifth-grade students of SD Negeri 104230 Tanjung Sari and included a questionnaire for the students to fill in. The questionnaire includes aspects of learning using a problem-solving-based digital book. Based on the small group trial questionnaire results, it can be concluded that the questionnaire assessment and trial of the problem-solving-based digital book development obtained an overall score of 92% with 'perfect' criteria.

The large group trial was given to 30 randomly selected fifth-grade students of SD Negeri 104230 Tanjung Sari, and a questionnaire was given to be filled in by the students. The questionnaire includes aspects of learning using a problem-solving-based digital book. Based on the results of the extensive group trial questionnaire, 92% of the 25 questions that had been tested were in the 'outstanding' category.

Evaluation

Product evaluation ends the development process regarding this problem-solving-based digital book research. The purpose of this evaluation stage is to analyze data on the effectiveness of the module through students' higher-order thinking skills. Learning outcomes are assessed before and after using a digital-based Pancasila Education module or through a pre-test and a post-test.

1. Feasibility Analysis of Digital Book Based on Problem Solving

The results of the problem-solving-based digital book feasibility analysis assessment were provided by experts who have gone through the evaluation stage. With an average percentage of stage I material experts, 74% with 'good' achievements, but still lacking, it requires significant improvement. After improvements were made, the average assessment of stage II increased by 92% with an 'outstanding' achievement. Then, the average eligibility of stage I media experts is 76% with 'good' achievements, but needs improvement, and in stage II, it is 88% with 'very good' achievements. In addition, the average assessment of stage I linguists obtained a score of 75% with 'good' achievements but needed improvement, and stage II received a score of 92% with 'outstanding' achievements. This means that the product is in the category of very feasible to be tested.

2. Practicality Analysis of Digital Book Based on Problem Solving

The practicality test was conducted to assess the learning media's practicality level. The method is by giving a questionnaire to students and educators with a focus on their answers to the problem-solving-based digital book learning media that has been made. The practicality test of the implementation method was carried out at SD Negeri 104230 Tanjung Sari with the participation of thirty-fifth-grade students and one instructor. This study aimed to assess the feasibility of teaching materials by considering experts' opinions on media, language, and materials. The learners obtained an overall score of 92%, which indicates a high level of practical achievement, with a pragmatism test score of 40 out of 50. Learners in the small group obtained an average score of 92% with the criteria of "very

practical” on the assessment of the practicality test. In comparison, learners in the large group had an average score of 94% with the same criteria, according to the evaluation data.

The problem-solving-focused digital book scored 47 out of a maximum of 50, resulting in a 94% success rate for the broad group of learners. The small group had a comparative percentage of 92%, while the large group had a comparative percentage of 94%. The data shows that the range is between 85% and 100%, so this evaluation is classified as very practical to use as a learning tool. Furthermore, the feasibility of employing fifth-grade educators of SD Negeri 104230 Tanjung Sari will be assessed to determine their reactions to using digital books centered on problem-solving. The educators' practical assessment of learning using digital books reached a score of 92%, categorizing the assessment as very practical to incorporate digital books into the learning process.

3. Effectiveness Data Analysis of Digital Book Based on Problem Solving

A pilot study involving eight grade five learners from SD Negeri 104230 Tanjung Sari was conducted. A series of 25 questions was presented to the children, the answers to which depended on their academic performance. After answering the questions, the learners' individual and classical learning achievement levels were determined. According to the calculation, thirteen percent of the learners had not achieved classical learning mastery, while 87.5% had achieved mastery. After assessing learners' proficiency with traditional and autonomous learning methods, the pre-test and post-test results were calculated; the result was a score of 0.53. Therefore, the score's progress in the small group experiment is estimated to be moderate.

A comprehensive study was conducted on thirty-SD Negeri 104230 Tanjung Sari fourth-grade students. There were twenty-five multiple-choice questions in this study. After the questionnaires were completed, the learners' individual and classical learning capacity was evaluated. According to these statistics, 93% of learners have reached the required proficiency level in classical learning, while 7% have not. The before and after test results are calculated based on evaluating learners' proficiency with traditional and independent learning methods. The statistically significant improvement criterion was met with an overall gain score of 0.71. This description leads us to conclude that digital books that focus on problem-solving can enhance learners' cognitive capacity in higher-order thinking.

Based on the comprehensive explanation, the following conclusions can be drawn: 1) creating a digital problem-solving book follows the stages of analysis, design, development, implementation, and evaluation, or the ADDIE model. 2) From the results of the feasibility test from experts, it is concluded that the digital book is suitable for use, 3) At the evaluation stage, an increase in student learning outcomes was obtained, based on the increase in learning outcomes, the digital book based on problem-solving was declared effective to use.

Discussion

Feasibility of Problem-Solving-Based Digital Book

Based on the results of the three validators, material experts, linguists, and problem-solving-based digital book design experts developed can meet the learning needs of students integrated in the problem-solving learning model. The material developed in the problem-solving-based digital book is related to the lives of students and the daily lives of students at school, society, and family, especially those related to Civic Education. Yuberti, in the book “Teori Pembelajaran dan Pengembangan Bahan Ajar dalam Pendidikan,” explains that the development of digital books on this material is in line with a humanistic theory, where, in the learning process, anything can be used as long as students can self-actualize. Students will get a maximized learning experience if there is a match between the material and their learning activities

(Giwangsa et al., 2022). Then the theory of cognitive progress developed by Piaget states that children aged 7-11 years (actual operational stage) in learning a model have been able to organize an object for dimensions, forms, or other characteristics (Komalasari, 2000). Likewise, the material developed in this problem-solving-based digital book has an appropriate sequence of material.

Practicality of Digital Book Based on Problem-Solving

The trial involving eight students was conducted to determine the degree of practicality of the product developed. Using learning media during the learning process makes students respond more actively to learning. Mutia on the Katadata page explained that learning media can make effective communication between students and educators (accessible through <https://databoks.katadata.co.id/datapublish/2022/03/23/ada2047-juta-pengguna-internet-di-indonesia-awal-2022>). Due to the availability of interactive learning media, educators can create a classroom atmosphere that is active, fun, efficient, and creates good emotions for students to understand more easily (Septiani & Rejekiningsih, 2020). Digital texts designed to improve problem-solving skills are adequate educational resources that can be used (Ambarwati et al., 2021; Mahuda et al., 2021; Susanto & Usman, 2024).

Effectiveness of Digital Book Based on Problem-Solving

To assess the product's efficacy, a pre-test and post-test were conducted in the fifth grade to evaluate the impact of problem-solving-based digital book learning media on understanding cultural diversity in Indonesian content. The success of a learning program can be assessed from various indicators, including the alignment between learning media and the chosen learning theory, as well as the level of engagement and enjoyment experienced by learners throughout the use of learning media. This problem-solving-oriented digital book learning platform is very successful in improving learners' advanced cognitive abilities when learning the subject matter of Indonesian cultural diversity. Digital books represent technological advances in digital printed books, providing a practical and pragmatic educational substitute (Haryanti & Mundilarno, 2024; Komara & Hadiapurwa, 2023). In addition, developing digital books can be a form of innovation in learning media for students in elementary schools (Hadiapurwa et al., 2021).

CONCLUSION

The problem-solving-based digital books created in fifth grade at SD Negeri 104230 Tanjung Sari have proven reliable, valuable, and efficient for educational purposes. One of them is a problem-solving-based digital book because it can make learners think about how problem solving is done and can improve students' higher-order skills during learning. Therefore, for those who want to develop higher-order thinking skills in the context of Indonesia's cultural diversity, this problem-solving-centered digital book can be a helpful alternative learning resource. The research developed a digital book based on problem-solving, a new breakthrough in assisting the learning process. Problem-solving-based digital book learning media is feasible, practical, and effective when learning, and increases higher-order thinking skills.

AUTHOR'S NOTE

The authors declare that there is no conflict of interest related to the publication of this article. The authors confirm that the data and content of the article are free from plagiarism.

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