26 (1), 2025, 612-625

Jurnal Pendidikan MIPA

e-ISSN: 2685-5488 | p-ISSN: 1411-2531

http://jurnal.fkip.unila.ac.id/index.php/jpmipa/

Development of Cultural Vista Flipbooks to Improve Learning Outcomes of Natural and Social Sciences of Elementary School Students

Tegar Firgiawan*, & Ali Sunarso

Department of Elementary School Teacher Education, Universitas Negeri Semarang, Indonesia

Abstract: This research aims to develop and test the effectiveness of the Flipbook Vista Culture learning media to improve the learning outcomes of natural and social sciences for fifth-grade elementary school students. This development is motivated by the ineffectiveness of conventional media and the complexity of natural and social science material that requires innovative and interactive media. This research uses the Research and Development (RnD) method of Borg & Gall, consisting of 8 stages. The research was conducted in two phases: development and trial. Initial data collection includes documentation, interviews, questionnaires, and observations. The instruments used in this study include pretest and posttest to test the effectiveness of the media and expert validation to test the feasibility of the developed media. Data analysis uses T-test and N Gain. The results of expert validation show that the Flipbook Vista Culture media is very feasible to use, with an average score of 87.5%. The effectiveness test shows a significant difference between pretest and posttest (0.000 < 0.05). The average N Gain improvement test reaches 0.55 with a moderate category. This proves that the Flipbook Vista Culture media is effective in helping students understand the material of Indonesia's cultural heritage. Based on the research results, the Flipbook Vista Culture media is recommended for use in elementary schools' natural and social science learning. This media is an interesting and innovative alternative compared to conventional media. The researcher recommends the Flipbook Vista Culture media be applied in learning, especially in fifth grade, to create meaningful learning.

Keywords: flipbook, learning media, learning outcomes.

▪ INTRODUCTION

Education strategically shapes quality and competitive human resources (Dihe & Wangdra, 2023). Along with the development of the digital era, the utilization of technology in learning is an unavoidable need to improve the effectiveness of the teaching and learning process. Integrating technology in education allows the delivery of material that is more interesting, interactive, and easily understood by students. Technological advances have also opened up significant opportunities for developing innovative learning media that meet student needs (Jambi, 2024). ne of the courses that requires a creative approach to learning is science, especially in delivering material that needs depiction and illustration, such as Indonesian cultural heritage. Understanding cultural heritage is vital to instill national values and strengthen students' national identity.

Based on the results of observations and interviews conducted at Sadeng 02 State Elementary School, the learning process is still dominated by conventional methods that are less interactive, resulting in students tending to be passive and have difficulty digesting the material. Limitations on innovative learning media, with textbooks as the primary source, exacerbate this condition. As a result, students' understanding of concepts, especially those that require visualization and interaction, such as cultural heritage material, is not optimal. The lack of utilization of learning media that can attract interest and facilitate interactive understanding is a significant obstacle to achieving the expected learning effectiveness. Therefore, learning media innovation that can bridge the

Tegar Firgiawan*, & Ali Sunarso
*Email: tegarfirgiawan@students.unnes.ac.id

DOI: http://dx.doi.org/10.23960/jpmipa/v26i1.pp612-625
Received: 23 March 2025
Accepted: 25 April 2025
Published: 06 May 2025

gap between conventional methods and the need for more interactive and visual learning on cultural heritage material is urgent in this research.

Reliance on textbooks as the only learning resource limits students' access to diverse visual representations and more profound learning experiences about Indonesia's cultural heritage. This hinders the development of a holistic and contextualized understanding. The potential of interactive digital learning media, such as flipbooks with multimedia features, has not been optimally utilized to increase student engagement and understanding of cultural heritage materials. Interactive features and multimedia elements are believed to bridge conventional methods' limitations (Andini & Fitriana, 2018). Therefore, learning media innovations are needed to increase students' interest and understanding of learning.

Responding to the problems mentioned earlier, researchers developed interactive Flipbook-based learning media in this study, which is one of the potential solutions to overcome these challenges. Flipbooks offer various advantages over conventional printed books, including flexible access, attractive visual displays, and a higher level of interactivity (Erawati et al., 2022). Through Flipbook learning media, students can access learning materials anytime and anywhere without being limited by time and space (Diani & Hartati, 2018; Setiawan et al., 2019). In addition, Flipbook integrates various multimedia elements, such as images, audio, video, and animation, which can help students understand abstract concepts (Wibowo & Pratiwi, 2018). By combining these features, Flipbook provides a more interesting and practical learning experience than conventional teaching methods.

Flipbook Vista Budaya has the advantage of its ability to convert teaching materials into a digital format similar to a physical book but with superior interactive features. The realistic page-turning feature creates a familiar reading experience, which can increase students' learning comfort and motivation (Andini & Fitriana, 2018). This Flipbook enriches learning materials with multimedia elements such as images, sounds, videos, and animations. This interactive content makes learning more interesting and easier for students to understand complex ideas. This Flipbook supports the creation of a more interactive and engaging classroom learning atmosphere while facilitating students' understanding of the material taught by the teacher (Prabowo & Wakhudin, 2024).

Previous research has shown that using Flipbooks in learning can increase student understanding of material presented visually and interactively. This research is also reinforced by several relevant previous studies by Handayani (2024) The use of Flipbook media obtained from the test results shows an increase in the analytical thinking ability of students through paired T-tests. 0.00 <0.05, health biotechnology e-module media through Flipbook can improve analytical thinking skills. Another study by Djarwo & Handasah (2020) showed that The use of flipbooks in the learning process has a positive response; this can be seen from the results that the digital learning media flipbook based on problem-solving is very suitable with a score of 82.3% and 84.8% for reading test results.

Research by Siswoyo (2025) Flipbook is very feasible and effective for teaching and learning activities, especially in grade IV science subjects about the parts of the plant body and their functions. This research is also reinforced by several relevant previous studies by Faiz et al. (2022) who revealed that Flipbook also allows teachers to deliver material more systematically and structured so that students can understand the concepts

taught better. According to Asi & Fauzi (2023) , with the interactive features in Flipbook learning media, students can be actively involved in the learning process, thus increasing their involvement in understanding the material.

Based on this background, the researcher will develop learning media using Flipbook Vista Budaya to improve the learning outcomes of fifth-grade students of Sadeng 02 State Elementary School: (1) the design of the Vista Culture Flipbook learning media, (2) the feasibility of the Vista Culture Flipbook learning media, (3) the effectiveness of the Vista Culture Flipbook learning media to improve the learning outcomes of IPAS material on the location and geographical conditions of the Indonesian territory of grade V students of Sadeng 02 State Elementary School.

Researchers will examine the development of Cultural Vista Flipbook learning media in Natural and Social Science lessons through Research and Development research. In the first problem formulation regarding the design of the Vista Culture Flipbook learning media, researchers will analyze student needs, teacher needs, and availability of facilities. This analysis will be the basis for determining the appropriate content and features for learning media. Furthermore, in the second problem formulation regarding the feasibility of the Vista Culture Flipbook learning media, researchers will validate the learning media by involving learning media experts and material experts. This validation aims to assess the quality and feasibility of learning media regarding design, content, and effectiveness.

Finally, in formulating the third problem regarding the effectiveness of the Vista Culture Flipbook learning media to improve IPAS learning outcomes, the revised learning media will be implemented in learning in class V of SD Negeri Sadeng 02. Furthermore, researchers will evaluate the effectiveness of learning media in improving student IPAS learning outcomes. This evaluation can be done by using a pretest and posttest to measure the improvement of student learning outcomes after using learning media. The data from the evaluation results will be analyzed to determine whether the Flipbook Vista Budaya learning media effectively improves IPAS learning outcomes on Indonesian cultural heritage material for fifth-grade students of SD Negeri Sadeng 02. Using the Research adn Development method, this research is expected to produce Flipbook Vista Budaya learning media that is feasible, effective, and contributes to improving student learning outcomes on Indonesian cultural heritage material.

The development of Flipbook-based learning media is focused on IPAS subjects with Indonesian cultural heritage material. The main objective of this research is to develop and assess the feasibility and effectiveness of Flipbook in improving student learning outcomes. Flipbook development follows the Research and Development (R&D) approach using the Borg and Gall model, which consists of 8 stages (Walujo, 2023). This model was chosen because it is systematic and meets the needs of developing effective and quality learning media. This research is expected to produce learning media that are feasible, effective, and contribute to improving students' Natural and Science learning outcomes.

▪ METHOD

The method used in this research is Research and Development (R&D), which aims to develop and evaluate a new product. Research and Development is a research approach that includes product development and effectiveness testing (Andini & Fitriana, 2018). In

developing Flipbook learning media on Indonesian cultural heritage material in Natural Sciences and Social Sciences (IPAS) subjects, this research applies the Borg & Gall model until the eighth stage (Amini et al., 2024). This model was chosen because it is systematic and because of the need to develop effective and quality learning media. The restriction of the eighth stage is done to adjust to the limited time and research needs.

Partisipants

This research was conducted at SD Negeri Sadeng 02, involving 23 fifth-grade students as research subjects. The sample selection was carried out by purposive sampling, taking into account students who have diverse academic backgrounds. The research subjects were selected based on their initial ability to understand Indonesian cultural heritage material and the availability of tools that support Flipbook-based learning. Sampling is also based on the homogeneity test from the results of the 1st-semester exam scores of natural and social science subjects, which obtained a homogeneity test result of 0.325. The reason for choosing the population at SD Negeri Sadeng 02 is because the academic ability of students is almost the same as seen from the results of the first-semester exam scores in natural and social science subjects, which show an average value that is not much different, the school environment conditions are the same, and taught by teachers of relatively the same quality. In addition to students, this study also involved IPAS subject teachers as respondents to provide input on the effectiveness of the developed Flipbook learning media. Teachers who become participants have a minimum teaching experience of five years and understand the current science curriculum.

Research Design and Procedure

This research follows the eight stages of the Borg & Gall model (Milasari & Setyasto, 2023), (1) Identification of potential problems, conducted through interviews, observations, documentation, and data analysis on the learning outcomes of fifth-grade students of SD Negeri Sadeng 02. The data collected includes learning barriers, students' and teachers' needs for innovative learning media, and the extent to which technology has been adopted in the learning process. (2) Data collection, conducted through questionnaires to determine the needs of teachers and students related to learning media. The data collected includes students' learning preferences, difficulties in understanding the material, and teachers' readiness to use digital technology. (3) Product design, including interface design and Flipbook content, which is aligned with the applicable Basic Competencies. Product design considers an easy-to-use interface, text readability, and multimedia elements to increase interactivity. (4) Design validation, conducted by material and media experts using a Likert scale validation sheet. This validation assessed the appropriateness of the content, curriculum alignment, and the effectiveness of the graphic design in engaging students. (5) Design revision, conducted based on the results of expert validation to improve the product before testing (Jamaludin & Ladjamudin, 2024). Improvements include technical and substantive aspects based on input from validators. (6) Small-scale product testing was conducted on nine fifth-grade students with varying cognitive abilities. This test aims to evaluate the usability, readability of text, and attractiveness of multimedia elements in Flipbook. (7) Product improvement based on feedback from teachers and students after small-scale testing. Refinements include navigation, image quality, and the effectiveness of delivering material through

Flipbook. (8) Large-scale testing was conducted on 23 fifth-grade students to measure the effectiveness of Flipbook learning media based on student learning outcomes. The use of Flipbook was observed during several learning sessions to assess students' active involvement in the learning process.

Instruments

This study uses primary data collected directly during the research process. The primary data consisted of qualitative data obtained through observations, questionnaires, and interviews with teachers at SDN Sadeng 02. Interviews were conducted to explore teachers' experiences utilizing Flipbook as a learning medium and their challenges—quantitative data obtained from the learning outcomes of fifth-grade students, measured through pretest and posttest scores.

Data collection techniques include test and non-test methods. The test method used 35 multiple-choice questions to measure students' understanding before and after using the electronic book. The test was designed based on the achievement indicators in the cultural heritage material. The test instrument uses formative test techniques such as pretests and posttests containing multiple-choice questions. Pretests were conducted to obtain data on students' initial abilities, as shown by the pretest results, and posttests were conducted to obtain data on students' final abilities, as shown by the posttest results after receiving treatment. The posttest was conducted to determine student learning outcomes after completing a series of learning programs using the Vista Culture Flipbook media. The questions used in the pretest-posttest are the result of Development by the researchers themselves by adjusting the indicators of the learning objectives that have been determined, where there are 10 indicators of learning objectives for the test questions used. Indicators of test/evaluation questions developed include students' cognitive abilities, with questions developed consisting of cognitive levels C4 (Analyzing) and C5 (Evaluating).

Non-test methods include observation, questionnaires, interviews, and documentation. Observations were conducted during the learning process to assess changes in student interaction and engagement in discussions. In the observation, researchers observed the learning process carried out in the classroom by observing the entire series of learning processes. In the interview instrument, there are six indicators of questions, with each indicator having eight questions for teachers and four for students, each having seven questions. The study's questionnaires amounted to four, including media needs questionnaires for teachers and students and questionnaires for validators from media experts and material experts. In the teacher needs questionnaire, there are eight indicators of questions, each having four questions, and for the student needs questionnaire, there are four indicators of questions, each having six questions.

Furthermore, material and media experts will fill out the questionnaire. The material expert questionnaire consists of 4 aspects of assessment, which include aspects of suitability, completeness aspects, competency aspects, and language aspects. The researcher developed the instrument alone by considering learning objectives, student characteristics, learning media design principles, and relevant learning theories.

Data Analyses

Data analysis was carried out based on evaluations by material and media experts using a Likert scale to assess the feasibility of the product. This analysis assesses aspects

of Flipbook's content, visual design, and ease of navigation. A Guttman scale questionnaire was used to collect student and teacher responses after using the developed learning media to evaluate the product's practicality. Respondents were asked to assess the clarity of the material, usability, and effectiveness of the media in helping students understand the subject matter. The data analysis techniques used include product data analysis, initial data analysis, and final data analysis. Analysis of product data obtained from the results of the feasibility test of the Vista Culture Flipbook learning media based on the criteria of the validation questionnaire of media experts, material experts, student response questionnaires, and teacher response questionnaires. Initial data analysis is an analysis of the needs of teachers and students for the Vista Culture Flipbook learning media. Final data analysis is obtained from learning outcomes when pretest and posttest, then the data is analyzed using normality, t, and n-gain tests—data analysis techniques with descriptive methods. The feasibility of learning media based on Flipbook Vista Budaya is analyzed according to the results of validation tests from media and material experts.

Furthermore, the product's effectiveness was evaluated through data analysis using the t-test, which compared the pretest and posttest scores from the large-scale trial. Before the t-test, a normality test was conducted to ensure normal data distribution and a homogeneity test to check the variance similarity between the pretest and posttest groups. A t-test was conducted to determine the significant difference between the pretest and posttest results if the data was normally distributed and homogeneous. In addition, the N-Gain Score calculation was carried out to determine the improvement in student understanding after using Flipbook learning media. N-Gain Score is used to classify the effectiveness of Flipbook into low, medium, or high categories. The N-Gain score category is used to classify the improvement of student learning outcomes after using learning media. The "High" category is given for N-Gain (g) values greater than 0.7, which indicates significant improvement. The "Medium" category indicates a moderate improvement for N-Gain values between 0.3 and 0.7. Meanwhile, the "Low" category is given for N-Gain values of less than 0.3, which indicates a less significant improvement or no improvement. With the procedures and data analysis techniques applied, this research is expected to provide valid and reliable results in measuring the effectiveness of Flipbook learning media in improving students' understanding of cultural heritage material.

In this study using two research variables, namely the independent variable and the dependent variable. The independent variable in this study is the Vista Culture Flipbook learning media, while the dependent variable is the IPAS learning outcomes of fifth grade students of Sadeng 02 State Elementary School.

▪ RESULT AND DISSCUSSION

Research findings and discussions in the Development of Flipbook learning media on cultural heritage material include three main aspects. First, the Development of Flipbook learning media designs and models in IPAS subjects on cultural heritage material aims to improve the learning outcomes of fifth-grade students of SD Negeri Sadeng 02. Second, the feasibility of Flipbook learning media is assessed based on expert validation and teacher and student responses in the Pancasila Education learning process. Third, the effectiveness of Flipbook learning media is measured by improving student

learning outcomes after using this media in the learning process of Indonesian Cultural Diversity.

Potential Issues

Researchers developed Flipbook learning media on Indonesian cultural heritage material through several stages: problem identification, interviews with classroom teachers, and questionnaire analysis of teacher and student needs. The lack of utilization of learning media that can attract interest and facilitate interactive understanding is a significant obstacle to achieving the expected learning effectiveness. Therefore, learning media innovation that can bridge the gap between conventional methods and the need for more interactive and visual learning on cultural heritage material is urgent in this research.

Reliance on textbooks as the only learning resource limits students' access to diverse visual representations and more profound learning experiences about cultural heritage. This hinders the Development of a holistic and contextualized understanding. The potential of interactive digital learning media, such as flipbooks with multimedia features, has not been optimally utilized to increase student engagement and understanding of cultural heritage materials. Interactive features and multimedia elements are believed to bridge the limitations of conventional methods.

Data Collecting

Researchers collected research data such as the results of teacher and learner interviews, the results of observations of the learning process in the classroom, the results of student learning documentation, and the results of teacher and learner needs questionnaires. The data that has been collected is then analyzed to compile materials and develop media that are tailored to the needs and characteristics of students and, of course, also adapted to the applicable learning curriculum. At the data collection stage, researchers collect various information related to product development so that the products produced can overcome the problems at SD Sadeng 02 and meet the needs of teachers and students. Product design is carried out according to the teacher and learner needs, and the results are based on a questionnaire.

Product Design

The Development of this media is based on literature studies relevant to learning materials and adapted to the target learning outcomes (CP) and applicable learning objectives. As an innovation in 21st-century technology, Flipbook learning media on Indonesian cultural heritage material is designed to be more interactive, attractive, and tailored to student needs. Media visual design is arranged to support more effective and efficient learning. Product design is done according to the teacher and learner's needs, and the results are based on a questionnaire. In this step, researchers began to design product ideas that were interesting and not monotonous. To overcome this, researchers began to realize the media at the development stage by using the right color combination and adjusting to the background.

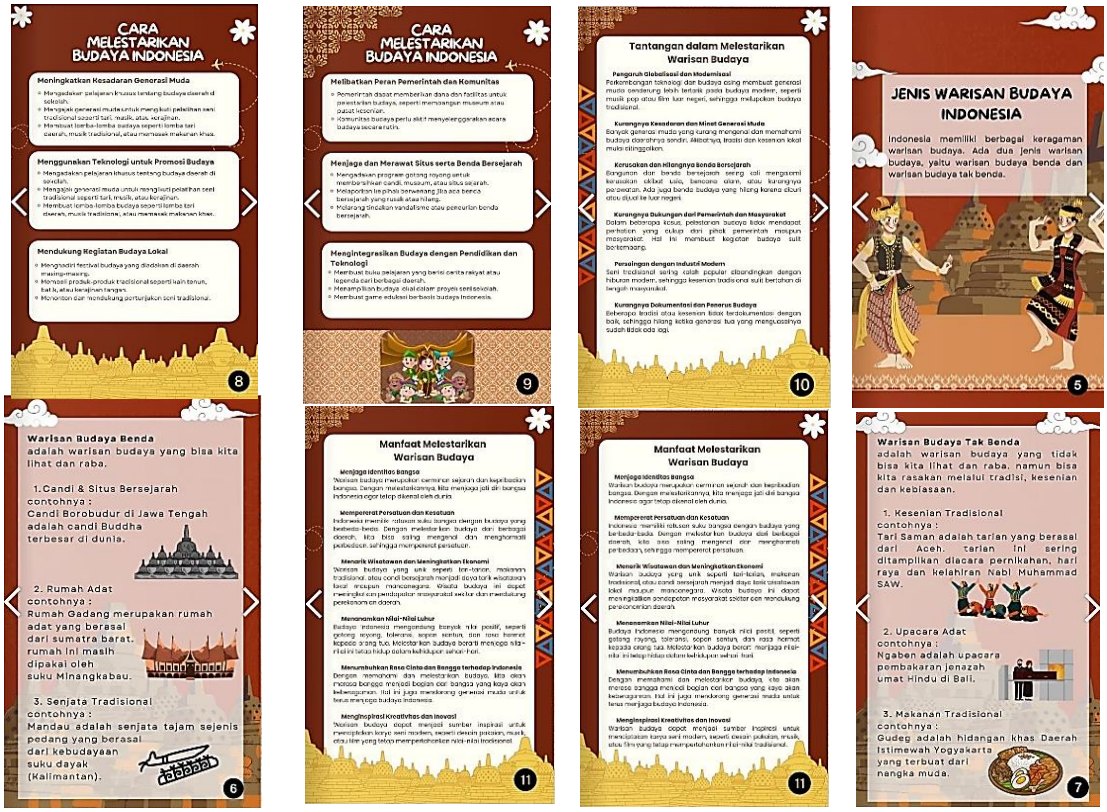

Figure 1. Vista culture flipbook media display

Furthermore, media feasibility assessment is conducted by expert validators in terms of both media and content. In this study, content validation aims to assess the feasibility of the material. In contrast, media validation is focused on the quality of visual design and functionality of navigation buttons in the developed learning media. The material expert obtained a percentage of 80% and categorized it as feasible. Meanwhile, media experts get a percentage of 95% with a very feasible category. From this assessment, it can be concluded that the media and material of the Vista Culture Flipbook learning media products on Indonesian cultural heritage material are suitable for testing.

Design Revision

Design revisions based on notes related to input, criticism, and suggestions given by material experts and media experts as a form of improvement for Vista Culture Flipbook media researchers on Indonesian cultural heritage material produced. The results of the revision notes, including adjusting the learning objectives in the learning media with those in the learning device, From the input provided by the material expert lecturer, the researcher made improvements to the media developed so that it was feasible to be tested.

Small Scale and Large Scale Product Trial

The effectiveness of Flipbook learning media on Cultural Heritage material can also be proven through the normality test, t-test, and N-Gain test results. The normality test

results for determining the pretest and posttest scores on a small scale using the Kolmogorov Smirnova and Shapiro-Wilk tests assisted by the SPSS 30 application. The normality test criteria are said to be normal if the significance value is> 0.05 so that the data is normally distributed. In the implementation stage, there were small-scale and large-scale trials. Small-scale trials involving nine students and a large scale of 23 fifth-grade students of SD Negeri Sadeng 02 to prove the effectiveness of the product to be developed. The product effectiveness test is carried out using an assessment instrument so that the data obtained is complete and meets the effectiveness standards.

The average pretest score on the small group trial was 54, with two students who completed KKTP (70) and seven who did not complete KKTP (70). The average posttest score on the small group trial was 85, with all learners completing KKTP (70). The results of this calculation prove that students' learning completeness increases from pretest to posttest scores.

The average pretest score on the large group trial was 48, with six learners who completed KKTP (70) and 17 learners who did not complete KKTP (70). The average posttest score on the small group trial was 85, with all students completing KKTP (70). The results of this calculation prove that students' learning completeness increases from pretest to posttest scores.

Table 1. Small scale normality test

Tes Normalitas						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistik	Df	Sig.	Statistik	Df	Sig.
Pre_Test	.168	9	. 200*	.925	9	.433
Post_Test	.209	9	.200*	.888	9	.191

The normality test results above show a significance of> 0.05; in the Kolmogorov-Smirnova pretest, the significance reaches 0.200, and the normality test of the posttest value shows a significance of 0.200. Then, using Shapiro-Wilk, the pretest significance result is 0.433, and the posttest significance is 0.191, so it can be concluded that the data has a normal distribution because the significance value is> 0.05. The results obtained show that 100% are perfect and enjoyable.

Table 2. Large scale normality test

Tes Normalitas						
	Kolmogorov-Smirnova			**Shapiro-Wilk**		
	Statistik	**Df**	**Sig.**	**Statistik**	**Df**	**Sig.**
Pre_Test	.153	20	. 200*	.946	20	.316
Post_Test	.170	20	.131	.947	20	.318

The table shows the normality test results for determining large-scale pretest and posttest scores using the Kolmogorov Smirnova and Shapiro-Wilk tests assisted by the SPSS 30 application. The normality test criteria are standard if the significance value is 0.05, so the data is usually distributed. The normality test results above show a significance of 0.05, namely, in the Kolmogorov-Smirnova pretest, the significance

reaches 0.200, and the normality test of the posttest value shows a significance of 0.131. Then, using Shapiro-Wilk, the pretest significance result is 0.316, and the posttest significance is 0.318, so it can be concluded that the data has a normal distribution because the significance value is 0.05.

Large-scale trials were conducted by fifth-grade students of SD Negeri Sadeng 02, as many as nine small-scale students and 23 large-scale students, to test the feasibility and effectiveness of the Vista Culture Flipbook media product on Indonesian cultural heritage material that has been made. The results obtained show that 100% are declared very good and interesting.

Effectiveness Test of Cultural Vista Flipbook Media

The test criteria for the paired sample t-test is if the sig value. (2-tailed) ;0.05, there is a significant difference in learning outcomes on pretest and posttest data. Conversely, if the sig value. (2-tailed); 0.05, no significant difference exists between learning outcomes in pretest and posttest data. With the help of the SPSS 30 application, the t-test results were obtained as follows.

Table 3. Small scale and large scale t test results

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest-Postest	-34.4444	10.13794	3.37931	-42.23715	-26.65174	-10.193	8	.000
Pair 1	Pretest-postest	-37.5000	9.52835	2.13060	-41.95941	-33.044059	-17.601	19	.000

In the table above, the results obtained are the sig value. (2-tailed) 0.000, which means smaller than 0.005, so it can be concluded that there is a significant difference between the results of the pretest and posttest on a small scale and a large scale. From this test, it is concluded that there is an average difference in the results before and after treatment. The significant difference between the pretest and posttest confirms that the learning intervention using Vista Culture Flipbook Media effectively improves student learning outcomes. So, the distribution is normal, and the t-test requirements are met. Furthermore, to prove that the Vista Culture Flipbook Media is effective, researchers use Cohen's d effect size based on the T-test because the T-test only knows significance. When determining its effectiveness using the effect size Cohen's d. Through the effect size Cohen's d, the results obtained were 1.979 on a small scale and 2.221 on a large scale. The tremendous value of Cohen's d indicates that the learning intervention has a powerful impact on improving learning outcomes. This means that using Vista Culture Flipbook Media is very effective in helping students understand the learning material. The results of Cohen's d effect size provide strong evidence of the effectiveness of Vista Budaya Flipbook Media in improving student learning outcomes.

The final step to prove the effectiveness of Flipbook learning media on cultural heritage in natural and social science subjects is to calculate data using the N-Gain score.

Then, the evaluation stage tests the increase in the average value of N-gain by comparing the increase in pretest and posttest scores, which are calculated using the N-gain index analysis. The N-gain test was conducted to determine the increase in pretest and posttest. The average increase was calculated using the N-Gain analysis method to compare the difference between the pretest and posttest scores. The N-gain test was conducted to determine the average increase in pretest and posttest. The average increase is calculated using the N-Gain analysis method to compare the difference between the pretest and posttest scores. The following are the results of the N-gain score.

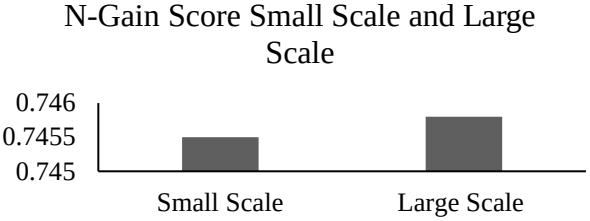

Figure 2. N-Gain score small scale and large scale

Based on the results of the test calculation (N-Gain) on a small-scale trial, it is known that there is an average increase of 0.55, which is included in the medium criteria. In the large-scale trial, it is known that there was an average increase of 0.55, which is included in the medium criteria. Vista Culture Flipbook Media was developed effectively after the small-scale and large-scale trial stages. In addition to being reviewed based on student learning outcomes, it is also reviewed based on the results of teacher and student response questionnaires to determine the success of the media being developed. This proves that Vista Culture Flipbook Media has succeeded in helping students understand Indonesian cultural heritage material.

Implication of Media Flipbook Vista Budaya

Several obstacles need to be overcome in implementing Flipbook as a learning media. One of the main obstacles is the limited availability of infrastructure and access to digital devices (Wulandari et al., 2022). Not all students have access to tablets or laptops to use Flipbook outside the school environment. In addition, teachers' readiness to integrate technology into the learning process is a crucial factor in the successful implementation of Flipbook. Therefore, support from various stakeholders, including schools and the government, must provide adequate facilities and training for teachers in utilizing technology-based learning media.

Cultural Vista flipbook learning media can provide new experiences for students related to contextual learning (Haryanto et al., 2023). The combination of Vista Budaya flipbook media creates a strong synergy in improving student learning outcomes. Vista Budaya flipbook, as a digital platform, provides flexibility and interactivity that is impossible with conventional media (Patonah et al., 2024). Multimedia features such as images, audio, and video can be integrated into flipbooks, making learning materials more interesting and easy to understand. Previous findings also reinforce this, which states that flipbook media can improve student understanding (Ilham et al., 2021)

This study proves that Flipbooks are a practical innovation to improve students' understanding of cultural heritage materials. The use of Flipbooks in learning not only improves students' academic performance but also provides a more engaging and interactive learning experience. With adequate infrastructure and proper training, Flipbook has the potential to be a long-term solution to improve the quality of education in the digital era. Therefore, the Development and application of Flipbooks in education must continue to grow to overcome future educational challenges (Simamora et al., 2022).

Cultural vista flipbook media, namely the content being taught, is effectively used as a learning media in the classroom and can improve student learning outcomes (Fauzy et al., 2024). This research is supported by the results of previous research examining the use of flipbook media in learning and found that flipbook media is feasible and effective in supporting student understanding in the learning process of natural and social sciences in Pigai & Yulianto (2024). Flipbook media is also proven to increase students' enthusiasm for learning because of the combination of problem-based learning models that make students active in learning (Rasmawan et al., 2022).

This research implies that Vista Culture Flipbook media can be used by teachers in learning natural and social sciences, especially for grade V elementary school students. This media involves students so that they are passive and active in learning so that learning is more meaningful and students can remember and understand the material presented. This research shows that technology-based learning media, such as Flipbook, have great potential in improving student learning outcomes. This encourages learning media developers to continue to innovate and utilize the latest technology in creating learning media that are more interactive, interesting, and effective. The technology-based press is proven effective because it is relevant to the needs of 21st-century students with higher-order thinking, problem, and collaboration skills. Therefore, the Development of learning media in the future needs to pay attention to the characteristics and needs of students and adjust to the demands of the times.

The findings of this study are in line with previous research Damayanti (2024) found that electronic books can increase student interest in learning materials, indicating that the use of electronic books encourages student initiative in completing tasks digitally (Studi et al., 2024) also revealed that Flipbook makes a significant contribution to the learning process and student academic outcomes within the framework of an independent curriculum. Furthermore, Flipbook increases the effectiveness of the teaching and learning process in the classroom (Susilawati & Rusdinal, 2022). This study concludes that using the latest Flipbook learning media in IPAS learning about the diversity of cultural heritage applied with Problem-Based Learning syntax is proven effective in improving the learning outcomes of grade V students of SDN Sadeng 02.

▪ CONCLUSION

Based on the study results, developing interactive Flipbook learning media in the subject of Natural and Social Sciences (IPAS) material on Indonesian cultural heritage was proven effective in improving the learning outcomes of fifth-grade students of SDN Sadeng 02 and on the results of the validity of the learning media obtained an average score of 87.5%. Furthermore, based on the effectiveness test, the number reached 0.000 and 0.05. There is a significant difference between the pretest and posttest results. Then, for the level of effectiveness through Effect, Cohen's d obtained 1.979 on a small scale

and 2.221 on a large scale. This indicates that the learning intervention has a powerful impact on improving learning outcomes. In the average increase test, the N-gain value is 0.55 with a moderate category. Based on the study results, Vista Culture Flipbook media is recommended for learning natural and social sciences in elementary school. This media is an interesting and innovative alternative to conventional media. Researchers recommend Flipbook Vista Budaya media to be applied to learning, especially in class V, to create meaningful learning.

▪ REFERENCES

Amini, F., Kelana, J. B., & Mugara, R. (2024). *Pengembangan bahan ajar materi interaksi sosial berbasis model pembelajaran kooperatif tipe STAD.* 3(1), 38–52. https://doi.org/10.22460/jpp.v3i1.12206

Andini, S., & Fitriana, L. (2018). Developing flipbook multimedia: the achievement of informal deductive thinking level. Journal on Mathematics Education, 9(2), 227–238.

Asi, N., & Fauzi, I. (2023). *Pengembangan e-book bergambar ceritarakyat teks naratif berbasis kearifan lokal.* 12(1), 61–81. https://doi.org/10.31571/bahasa.v12i1.5487

Billah, N. N. *Pengembangan e-book interaktif berbasis representasi kimia pada materi termokimia* (Bachelor's thesis, Jakarta: FITK UIN Syarif Hidayatullah Jakarta).

Damayanti, A. M. S. (n.d.). Pengembangan E-Book IPA Terpadu Tema Bumi Dan Tata Surya Di SMP / MTS.

Diani, R., & Hartati, N. S. (2018). *Flipbook berbasis literasi Islam: Pengembangan media pembelajaran fisika dengan 3D pageflip professional.* Jurnal Inovasi Pendidikan IPA, 4(2), 234–244. https://doi.org/10.21831/jipi.v4i2.20819

Dihe, L., & Wangdra, Y. (2023). *Pendidikan adalah faktor penentu daya saing bangsa.* September, 84–90.

Djarwo, C. F., & Handasah, R. R. (n.d.). JUPE: *jurnal pendidikan mandala pengembangan media pembelajaran digital flipbook berbasis problem solving pada materi struktur atom di tingkat sekolah menengah atas.* http://ejournal.mandalanursa.org/index.php/JUPE/index

Faiz, A., Nurhabibah, P., & Wardani, M. A. (2022). Jurnal basicedu. 6(4), 7352–7359.

Fauzy, F., Jesmin, M., Sahruddin, A., & Arya Makarim, M. (n.d.). *Implentasi media interaktif berbasis heyzine flibook terhadap motivasi belajar siswa smp negeri 12 barru.*

Haryanto, H., Widarti, H. R., Mashfufah, A., Dewi, R. S. I., & Kusumaningrum, S. R. (2023). Flipbook-based project-based learning: an opportunity to improve science literacy. Jurnal Penelitian Pendidikan IPA, 10(7), 4004–4009. https://doi.org/10.29303/jppipa.v10i7.7916

Jamaludin, D. A., & Ladjamudin, A. Bin. (2024). Development of android application-based e-learning learning media using the borg and gall method. 5(1).

Jambi, U. (2024). *Pengaruh penggunaan aplikasi canva dalam media pembelajaran ipa di sekolah dasar*. 4(2014), 330–339.

Ketut Erawati, N., Kadek, N., Purwati, R., Dewa, I., Putrı, A., & Saraswatı, D. (n.d.). *Pengembangan e-modul logika matematika dengan heyzine untuk menunjang pembelajaran di smk.*

Milasari, D., & Setyasto, N. (2023). Effectiveness of the microsoft sway assisted problem-based learning model on science learning outcomes. Jurnal Penelitian Pendidikan IPA, 9(9), 7028–7035. https://doi.org/10.29303/jppipa.v9i9.4563

Patonah, S., Januar Saputra, H., & Listyarini, I. (2024). *Pengembangan bahan ajar melalui heyzine flip book software untuk siswa kelas 1 sekolah dasar*. In Elementary School (Vol. 11).

Pigai, F. Y. P., & Yulianto, S. (2024). Development of flipbook learning media to improve learning outcomes IPAS. Jurnal Penelitian Pendidikan IPA, 10(8), 5775–5781. https://doi.org/10.29303/jppipa.v10i8.7937

Prabowo, E., & Wakhudin, W. (2024). *Pengembangan media augmenteded reality (ar) untuk meningkatkan motivasi belajar siswa pada mata pelajaran ipas kelas 4 sd negeri 3 linggasari.* Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI), 4(2), 591–604. https://doi.org/10.53299/jppi.v4i2.552

Rasmawan, R., Muharini, R., & Lestari, I. (2022). *Pengembangan e-modul flipbook ipa berbasis problem based learning pada materi pencemaran lingkungan.* 6. https://doi.org/10.31004/basicedu.v6i5.3558

Setiadi, M. I., Muksar, M., & Suprianti, D. (2021). *Penggunaan media pembelajaran flipbook untuk meningkatkan aktivitas dan hasil belajar siswa.* Jurnal Ilmu Sosial dan Pendidikan (JISIP), 5(4), 67-75.

Setiawan, D., Suratno, S., Ansori, I., Witanto, Y., Marjuni, M., Rahmadani, N. K. A., & Supriyanto, T. (2023). Powtoon-based learning videos for quality elementary school learning outcomes. ABDIMAS: Jurnal Pengabdian Masyarakat, 6(2), 3811-3818.

Simamora, A. H., Jampel, N., & Tegeh, I. M. (2022). *E-Book berdasarkan model pembelajaran berbasis proyek pada mata kuliah media pembelajaran.* 5(1), 64–74.

Susilawati, T., & Rusdinal. (2022). *Pengembangan media pembelajaran e-book berbasis blended learning tematik terpadu di kelas iv sekolah dasar*. Jurnal Cakrawala Pendas, 8(2), 378–387. https://doi.org/10.31949/jcp.v8i2.2285

Walujo, D. A. (2023). Development of an epub format e-book on dynamic electricity material. 2(2), 75–83.

Wibowo, E., & Pratiwi, D. D. (2018). *Pengembangan bahan ajar menggunakan aplikasi kvisoft flipbook maker materi himpunan.* Desimal: Jurnal Matematika, 1(2), 147-156.

Wulandari, T., Mudinillah, A., Islam, A., Batusangkar, N., Tinggi, S., & Islam, A. (2022). *Efektivitas penggunaan aplikasi CANVA sebagai media pembelajaran IPA MI/SD.* 2(1), 102–118.