

Development of digital art and culture book for improving students learning outcomes

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Abstract: This study aims to determine whether the learning resources in the form of digital art and culture books are valid, practical, and effective in improving student learning outcomes. The ADDIE model was used to develop digital books. The study was conducted on grade VII students at a junior high school in Bone. The books that were developed were validated by experts and the media. Trials on 3 students and 9 students to see the practicality of digital books. Meanwhile, 26 students were involved in learning for effectiveness testing. The development results showed that digital books were valid (80.00%) based on material validators and very valid (88.23%) based on media experts. Individual responses from three students showed practical books, followed by findings in the responses of 9 students and 1 teacher (percentage range 88-95). The effectiveness test results showed that the average before digital books was 60 with a "low" category, and the average value obtained after using digital books was 90 with a "high" category. Wilcoxon testing indicates that digital books effectively improve student learning outcomes (sig. < 0.05). It can be concluded that using digital books in arts and culture subjects has proven valid, practical, and effective in improving student learning outcomes.

Keywords: Arts and culture, digital books, learning development

Abstrak: Penelitian ini bertujuan untuk mengetahui apakah sumber belajar berupa buku seni budaya digital valid, praktis, dan efektif dalam meningkatkan hasil belajar siswa. Model ADDIE digunakan untuk mengembangkan buku digital. Penelitian dilakukan pada siswa kelas VII SMP Negeri di Bone. Buku yang dikembangkan divalidasi oleh pakar dan media. Uji coba pada 3 siswa dan 9 siswa untuk melihat kepraktisan buku digital. Sementara itu, 26 siswa dilibatkan dalam pembelajaran untuk uji keefektifan. Hasil pengembangan menunjukkan bahwa buku digital valid (80,00%) berdasarkan validator materi dan sangat valid (88,23%) berdasarkan ahli media. Respon individu dari tiga siswa menunjukkan buku praktis, diikuti dengan temuan pada respon 9 siswa dan 1 guru (rentang persentase 88-95). Hasil uji keefektifan menunjukkan bahwa rata-rata sebelum menggunakan buku digital adalah 60 dengan kategori "rendah", dan nilai rata-rata yang diperoleh setelah menggunakan buku digital adalah 90 dengan kategori "tinggi". Pengujian Wilcoxon menunjukkan bahwa buku digital efektif meningkatkan hasil belajar siswa (sig. < 0,05). Dapat disimpulkan bahwa penggunaan buku digital dalam mata pelajaran seni dan budaya terbukti valid, praktis, dan efektif dalam meningkatkan hasil belajar siswa.

Kata kunci: Seni dan budaya, buku digital, pengembangan pembelajaran

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INTRODUCTION

Education is a place to improve quality, professional, independent, and creative human resources. The key to building the nation's next generation that is intelligent, creative, has character, and has quality is a good education system that can be adequately organized (Fausta et al., 2024; Yáñez-Aldecoa et al., 2015). The use of technology is important in the field of education to meet the needs of education in this century. In addition, the use of technology in learning activities is useful for training students' digital literacy as early as possible to equip students to face challenges in the real world (Farias-

Gaytan et al., 2022; Mustofa et al., 2024). The independent curriculum gives teachers the freedom to innovate and choose teaching materials that are appropriate to the needs of students in their environment by integrating technology into it (Arianti et al., 2023; Yani et al., 2024). Teaching materials can be many things that can increase students' knowledge or experience (Horota et al., 2023).

Printed books are teaching materials teachers and students use in learning activities. Based on the data that has been collected, it is known that printed books available in school libraries still have limitations. One of the subjects that does not or has not been available in printed books is the subject of arts and culture. Thus, students do not have free access to learning resources or learning references. The learning process is still one-way, which causes students to play a less active role in the classroom so learning achievement is inadequate (Damopolii et al., 2021). One strategy educators may use to foster active learning among students is the utilization of engaging media (Damopolii & Nunaki, 2016; Nurhikmah et al., 2021).

One of the interesting learning media in the learning process is digital books. Digital book learning media is a combination of the use of electronic technology (smartphones, laptops, and notebooks) with textbooks so that someone can read books in the form of soft files equipped with images that can be enlarged and are easy to carry anywhere (Saputra & Anwar, 2019). Digital books can only be used through supporting devices such as computers, tablets, and smartphones (Arnidah et al., 2020). Digital books are publications including text, graphics, or audio, released in digital format for reading on computers or other electronic devices (Sari, 2022). Digital books include two attributes: firstly, the text has hyperlinks that facilitate navigation to related subjects, and secondly, the text may incorporate visual, audio, and video features. Secondly, the contents of the digital book may be readily modified to suit the reader's preferences, including the addition of new texts and the removal of undesirable information (Mufit et al., 2022; Natsir et al., 2022; Setyantoko et al., 2023).

Art and culture is a course that aims to provide understanding, knowledge, experience, and the ability to create art so that students can appreciate their own culture and respect others, which, in the end, they can play an active role in the community, national, and state life (Aryani, 2019; Prameswari et al., 2020). Art and culture education plays an important role in the digital era because it provides opportunities for students to maintain and develop cultural heritage through digital media (Gasouka et al., 2013; Yanuarsari & Setiawan, 2018). Art and culture are often carried out with a theoretical and practical approach, so they require teaching materials that are in accordance with the needs of students (Arif, 2017). Based on this, digital books are a good alternative and solution in providing learning resources that are close to students because digital books provide interesting learning images and videos that can be used as references to stimulate students' creativity in creating a work that can improve student learning outcomes (Alamsyah et al., 2019).

Research conducted by Handoko and Zaini (2021) shows that digital books developed in arts and culture subjects are effective and can increase students' interest in learning. Ma'arif and Claudia (2021), in their research, revealed that the development of digital books is suitable for use by junior high school students. In their findings, Puspa Rani et al. (2022) showed that digital books and teaching materials are suitable for use as learning resources

in arts and culture subjects based on the results of validation tests by material, media, and learning experts. Therefore, this study aims to develop digital books on arts and culture to improve student learning outcomes.

METHOD

This study uses R&D methods to develop innovative digital books. The development model used is the ADDIE model, which includes five stages: analysis, design, development, implementation and evaluation (Branch, 2009). Based on the results of this study, learning media in the form of digital books that are valid, practical, and effective in improving student learning outcomes have been successfully developed. The location of the study was an Islamic junior high school in Bone. In the even semester of the 2023/2024 academic year, this study aimed to determine the increase in student learning outcomes after using digital arts and culture books in the learning process. The subjects in this study were grade VII students at a junior high school in Bone, Arts and Culture Teachers, and one media and one material validator. Three students were used during individual trials, small group trials on nine students, and digital book effectiveness tests on 26 students.

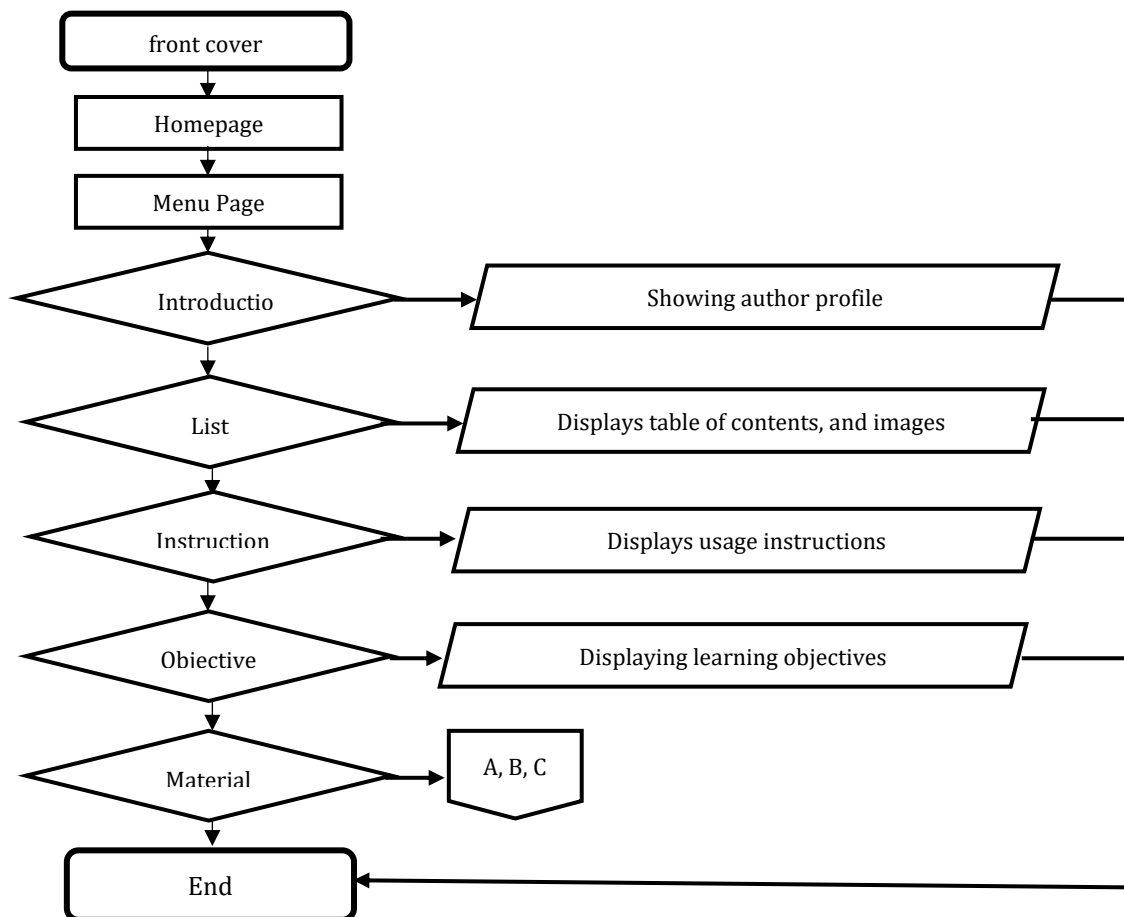


Fig. 1. Digital book flowchart

Digital books are developed by creating concepts and designing products. The concept underlying the creation of this digital book is interesting, informative, and interactive using the Canva and Flipbook applications. The final result of this product development is a digital

book that can be accessed by smartphone, tablet, and computer users. After the product concept is created, the next step is to create a product design to make it easier for researchers. The digital book product developed contains book elements such as a cover page, foreword, table of contents, discussion material, summary, practice questions, glossary, and bibliography. The material developed concerns the subject of arts and culture. The material in the interactive digital book is developed according to the learning objective flow.

The material consists of theoretical material and practical material. Theoretical material is presented in text form and accompanied by images. Practical material is presented in the form of video tutorials. There are multiple-choice questions that aim to determine the level of learning. Practice questions are also integrated with online platforms such as quizzes. Interactive digital book products, with Flip-HTML5 format, allow you to create flipbooks and export them in Android application format (APK) or PC.

The research data were obtained from the needs analysis results, material validation questionnaires, media validation questionnaires, student and teacher practicality trial questionnaires, and learning outcome tests. Furthermore, the collected data were analyzed descriptively using percentages. The validity and reliability criteria for digital books were adapted from the research of Wijaya et al. (2021), who developed digital media. Valid and practical learning tools are those that meet a minimum standard of being classified as "valid" and "practical" (Ibrahim et al., 2023). Based on these criteria, student learning outcomes can be effective or increased if the scores obtained by students who take the Arts and Culture learning test have a percentage of mastery level of 61%-100% with a medium or high category (Wijaya et al., 2021). In addition, the effectiveness test is also calculated from the results of the Wilcoxon test, where the data is first tested for normality.

RESULTS AND DISCUSSION

The results of the identification of needs based on initial research showed that the learning references given to students are textbooks/printed books published by the Ministry of Education as a guide for teachers. Printed books for the subject of arts and culture for class VII are still limited. In addition to these limited printed books, the presentation of materials in the form of text and images is also unclear. For this reason, the teacher of the subject of arts and culture stated that there needs to be a learning resource that can be used as an independent reference for students to enable students to have access to arts and culture learning materials. In this case, digital books are one alternative solution because digital books themselves have characteristics that can be accessed independently by their users whenever and wherever they are. The assessment of teacher requirements was conducted using a questionnaire to determine the need for the generated digital books in the development process. Teachers in the learning process of arts and culture for class VII, namely teachers have never used digital books when teaching, and teachers need digital books that are equipped with text, images or learning videos in teaching the subject of arts and culture.

The results of the student needs analysis show that they have difficulty in learning art and culture subjects because the material is difficult to understand. According to them, the explanation from the teacher is not enough. Although learning resources are already available at school, they still need interesting alternative learning materials, because so far

they have been looking for additional learning resources other than those that have been provided. Students consider that they need digital-based books and they agree if they use them in learning.



Fig. 2. Digital book cover view before and after revision



Fig. 3. Display of changes at the beginning of the book contents

Table 1. Validation outcomes by material and media experts

Expert	Percentage score	Decision
Media	88.23%	Very valid
Material	80.00%	Valid

Table 4 presents the outcomes of the validation evaluation indicators in the form of media aspects consisting of the usability and quality of digital books and material aspects, namely the suitability of material/content and language. The results of the assessment showed that the material validation obtained a score of 80%, and media experts obtained a percentage score of 88.23% so that it can be stated to be in the "valid" and "very valid" categories.

In our study, the digital books that have been developed have met the valid criteria. The digital book being developed is a digital book on arts and culture, which is presented not only in the form of text and images but also includes learning videos. The content of the digital book teaching materials consists of materials, learning videos, and multiple-choice practice questions in the form of interactive quizzes that are used online. The material discussed in the digital book teaching materials contains one semester of learning in the even semester consisting of two-dimensional and three-dimensional fine arts, two-dimensional and three-dimensional works of art, and pantomime theater arts. In addition, digital books are designed with various interesting elements; the combination of color displays, backgrounds, and hyperlinks in digital books is very attractive to students. This is in line with research conducted by Setiawan and Santoso (2019), which explains that learning materials in digital books, in addition to containing text and images in the material, can also insert multimedia elements such as audio, video, animation, and hyperlinks.

Based on the validation test, the material is declared valid based on the assessment results from aspects of suitability with the learning plan, clarity of objectives, scientific truth, assignments and exercises, use of language, student involvement, and cognitive development. Based on the media validation test, it is declared very valid based on an assessment of aspects of color composition, component layout on the learning media so that it is comfortable to look at, attractiveness of the screen display design, ease of access, video quality, button layout and ease of access, and color. The digital books that have been developed can be used in classroom trials (Yomaki et al., 2023). The digital book was tested through individual trials (involving three students) and small group trials (involving nine students) to determine the quality of the digital book. The results of the trials are presented in Figures 4 and 5.

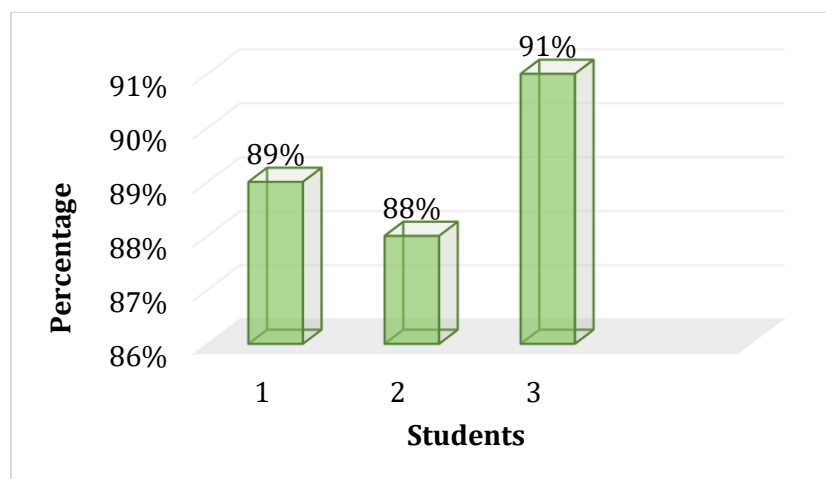


Fig. 4. Individual student response

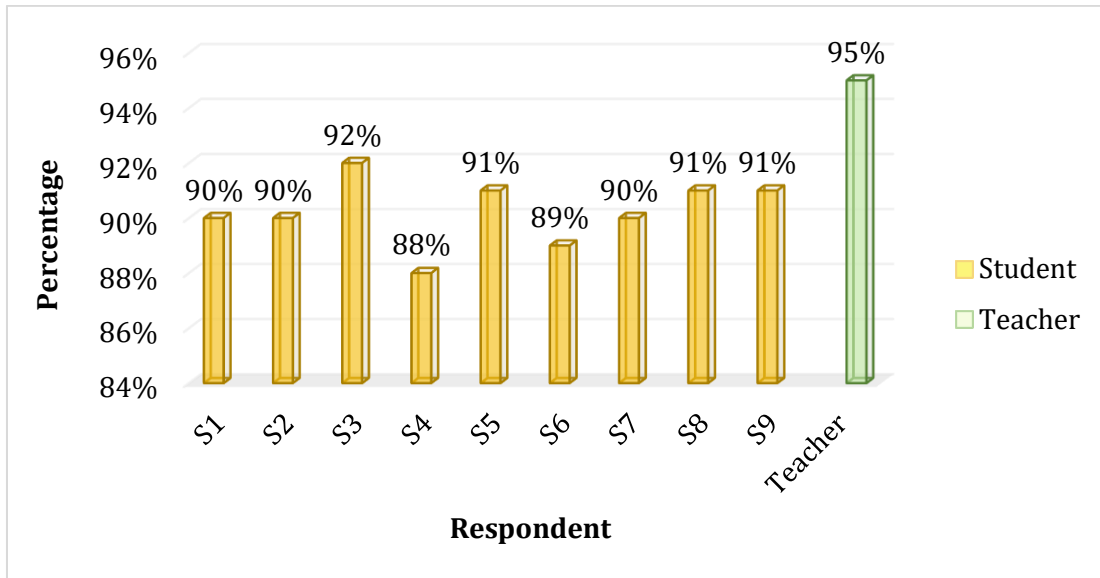


Fig. 5. Small group student response questionnaire

Figures 4 and 5 indicate that digital books are at a very practical level, meaning that the use of digital books can support the learning process. Students consider books to have an attractive appearance, be easy to understand, read the text, be clear in the pictures, and understand the instructions. In addition, they consider books practical to use anywhere, increase understanding of arts and culture, create enthusiasm, and stimulate thinking. The videos in digital books help to understand the material. A good response to digital book media shows students are motivated to learn using digital books (Dita et al., 2023; Zaman et al., 2024). Teachers have also shown a good response. The percentage of student responses is 95%, which indicates that digital books are very practical.

To find out the effectiveness of digital books, it can be seen from the learning outcomes of students in class before using digital books and after using digital books. A comparison of student learning outcomes before and after using digital books can be seen in Figure 6.

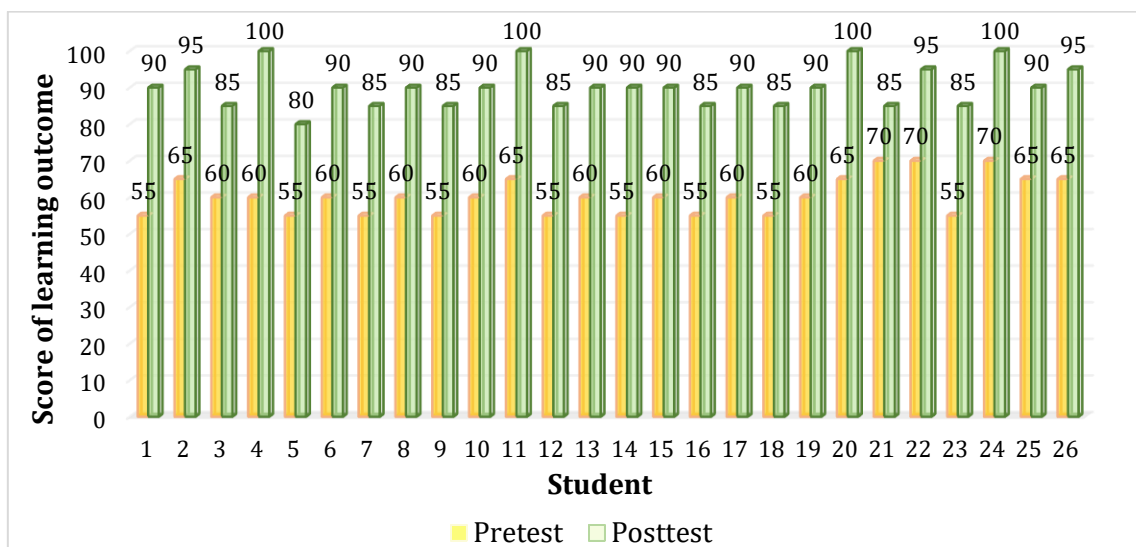


Fig. 6. Student learning outcomes

Figure 6 was obtained by giving students a learning outcome test. The average before using digital books was 60 with a "low" category and the average value obtained after using digital books was 90 with a "high" category. This shows an increase in student learning outcomes by 30 points so that it can be stated that the use of digital books in arts and culture subjects can be used to improve student learning outcomes. Previous research by Qouri and Zulherman (2023) supports this findings, which stated that the digital books developed were effective in improving student learning outcomes and were suitable for use in the learning process. Further effectiveness testing used the Wilcoxon test. The results of the normality test show that the learning outcome data is not normal with a sig. value < 0.05 (pretest = 0.002, posttest 0.000).

Table 2. Wilcoxon test results

		N	Mean Rank	Sum of Ranks	Z	Sig.
Posttest - Pretest	Negative Ranks	0	0.00	0.00	-4.589	.000
	Positive Ranks	26	13.50	351.00		
	Ties	0				
	Total	26				

Table 2 indicates that digital books effectively improve student learning outcomes (sig. < 0.05). No students were found to have decreased learning outcomes (negative rank = 0). A total of 26 students experienced increased learning outcomes. This study successfully developed a digital art and culture book to improve student learning outcomes. The digital book used in this study supports the student learning process because students become more active in class and students do not feel bored because the digital book developed is accompanied by interesting pictures and videos. Alamsyah et al. (2019) stated that the art and culture teaching materials are suitable for use and can improve student learning outcomes.

This study shows that digital books featuring quizzes and multimedia such as videos significantly increase student engagement and cognitive abilities, demonstrating the success of implementing modern technology in education and highlighting the effectiveness of interactive media in enhancing the learning experience. The developed digital books are effective learning media that can be utilized in the classroom to improve student learning outcomes (Damayanti et al., 2024; Putri et al., 2020). Digital books help a person or student to make words and images more positive in their minds because these learning resources are visually appealing, easily accessible, and equipped with text and images, making them more interesting and easily accessible (Dita et al., 2024). Our research shows that the developed digital book is an effective and relevant alternative learning media and is suitable for art education in schools. Flipbooks have high validity and practicality, making them an interesting and attractive choice for digital learning.

The advantage of this digital book is that there are hyperlinks in the table of contents that automatically direct to each desired page. The images provided are accompanied by their sources that can be directly directed to Google; the learning videos are integrated directly with YouTube; and the quizzes provided are interactive and lead to the Quizizz

application by clicking on the available link. Another fairly obvious weakness is in the appearance of the practice questions provided. Related to the form of the questions, they are still multiple choice and have not been varied, such as combining short answers, essays, matching, etc. This digital book product has minimized its weaknesses and shortcomings in each trial, from the validation stage to the product trial.

CONCLUSION

The results of the needs analysis state that students need digital books for learning. Digital books are designed according to the learning objectives; the contents of the digital books are designed using the Canva application and published on the professional Flip PDF application. Digital books are equipped with materials in the form of text, images/photos, and learning videos that can be accessed using the internet via smartphones, tablets, laptops, or computers. The results of the digital book validation level, namely the validation of the material, obtained a valid category, while the validity of the media obtained a very valid category. The findings of the practicality level of the digital book, namely from the questionnaire responses of students and teachers to the digital book, obtained a very practical category. The findings of the effectiveness level of the digital book obtained a pretest and posttest showing an increase in learning outcomes in the very effective category. So it can be concluded that the use of digital books in arts and culture subjects has been proven effective in being applied at school to enhance student learning outcomes.

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